

March 1986

U.S. \$3 Canada \$3.95

Just For Your  
Sanyo Personal  
Computer

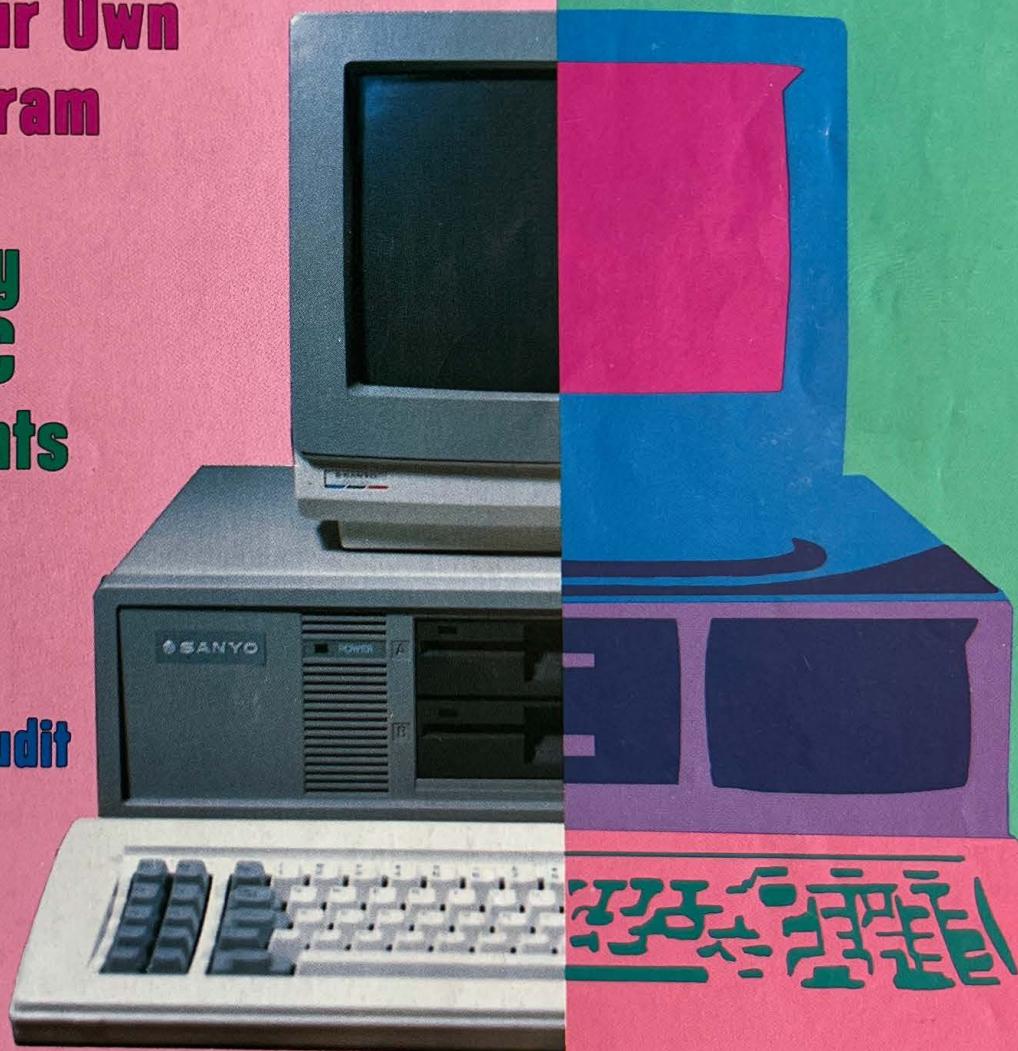
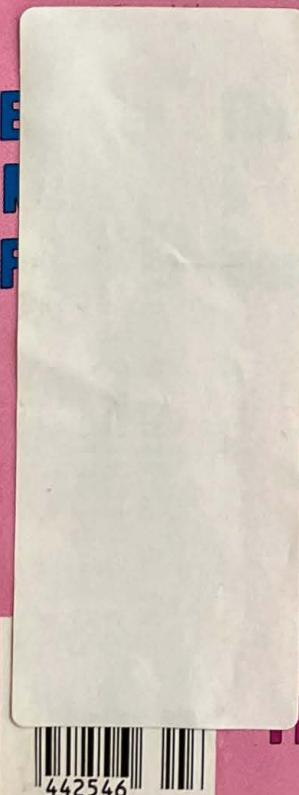
# soft sector®

The Monthly Magazine For Sanyo Personal Computer Users

## State-Of-The-Art Design The MBC-885

Customize Your Own  
Terminal Program

Convert Binary  
Files To BASIC  
Data Statements



Plus: Modify Your Cursor Control Keys With *Keybusters*



# PICASSO

The  
**ULTIMATE**  
In Computer Graphics Programs

**PICASSO** by Bill Dunlevy

This is the one to set the standards! PICASSO does more than many graphics programs costing thousands of dollars more. Never before has such power and simplicity been available to the user.

What does PICASSO do? Everything!

- \* Large, helpful picture menus, eliminate the need to memorize control keys or cumbersome graphic languages.
- \* Keyboard, Joystick, or even Graphic Tablet controlled, in "directional" or "free-hand" format.
- \* You can choose from 64 pre-mixed colors, or mix your own for over 10,000 possible patterns, and save your favorites to a palette on disk!
- \* Over 20 different "brushes" let your draw with symbols in different "densities" for an air-brushed effect.
- \* Special "Rubber band" graphics let you see what you're doing AS you make adjustments on lines, rays, boxes, circles, polygons, stamps, etc.
- \* Versatile "FNI" permits you to change multi-color patterns.
- \* You're not restricted to simple circles and ellipses here! You can create ANY kind of polygon: from triangles, to elliptical pentagons, to perfect circles and everything in between!
- \* Powerful "Stamp" system lets you copy, move, save, and perform complexed operations with any sections of your pictures.
- \* You can use your picture files with MichTron's new FREEZE FRAME graphic printing utility for fantastic hardcopy pictures, and in your own BASIC or machine language programs for all your graphic needs.

What DOESNT PICASSO do? Restrict your imagination.

PICASSO is guaranteed to knock your smocks off!

256K SANYO MBC-550/555 required

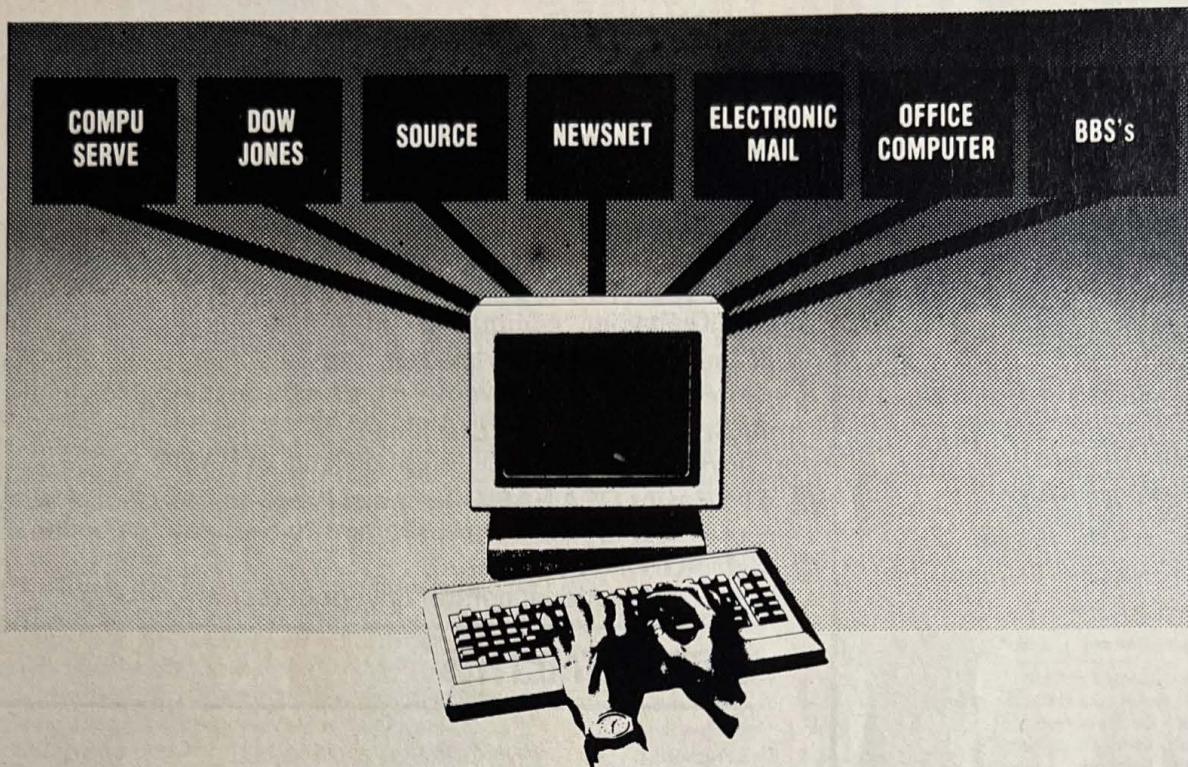
(Joystick recommended)

\$99.95

**MichTron**

576 S. Telegraph Road Pontiac, Michigan 48053  
Orders & Info: (313) 334-5700

# INTELLICOM



## A COMPLETE Communications System

Now you can tap any of the countless telephone data based INFO sources, EXTRACT an FILE that data away for use later. Suddenly, your computer is the smartest terminal around because INTELLICOM emulates such terminals as:

- DigitalVT52/VT100
- TeleVideo 910 • ADM3A/5
- ADDS Viewpoint/25
- CompuServe Executive
- Simple TTY
- TeleVideo 925

Now you can transfer **both binary and text** files, using simple ASCII, ASCII Capture, Xon/Xoff, XMODEM (both Checksum and CRC are supported) or CompuServe A Protocols. Operate at

any speed up to 4800 (Sanyo) or 9600 baud (IBM PC) without ever being outdated as higher speed/lower priced modems are introduced.

Simple menu selections, with a built in **HELP** facility keep it easy forever.

And our expert mode will allow you to even bypass the menus. **Autodial directories (Hayes or equivalent modems)** are supported along with simultaneous printing. Our built in DOS WINDOW will actually let you run another program from within INTELLICOM (192K min. ram).

**Additional features:** Variable Buffer Size reduces disk activity, while utilizing RAM capacity. BATch file

utility program included. **Persistence feature for autodialing.**

**Auto log-on script files** can be used to support almost any smart modem and/or automatically log into your favorite remote system. **User defined function keys. Color support. Michtron and AOK DOS support** and more! Best of all, the entire versatile INTELLICOM package costs you only **\$89.95 COMPLETE! RUSH \$15 today and you'll receive a fully functional demo disk that lets you check it all out.** If you order INTELLICOM, simply return the demo disk and we'll deduct your \$15 from the \$89.95 purchase price.

For \$10.00 more we will supply you with the host support code for the error checking protocol on Dec system 10, 20, or VAX ... and save your company a bundle!

**DON'T DELAY!  
ORDER TODAY!  
RETURN UPS SHIPMENT  
GUARANTEED! HURRY!**

# COMPUTER TOOLBOX inc.

MasterCard/VISA/COD orders accepted.  
Specify computer and DOS version when ordering. Connecticut residents add 7½% sales tax. Add \$5 shipping for all orders.

1325 East Main Street, Waterbury, CT 06705  
In Connecticut call: 597-0273



# Soft sector

The Monthly Magazine for  
Sanyo Personal Computer Users

Vol. II, Issue 8

March 1986

Editor and Publisher  
Lawrence C. Falk

Managing Editor Belinda C. Kirby  
Consulting Editors Gordon Monnier,  
T. Kevin Nichols

Submissions Editor Jutta Kapfhammer  
Reviews Editor Monica Dorth

Editorial Consultants Tamara Dunn,  
Danny Humphress

Contributing Editors Fred Blechman,  
Tim Purves, Brian M. Stone, Charlotte A. Stone

Technical Assistants Cray Augsburg, Ed Ellers

Editorial Assistants Wendy Falk,  
Judi Hutchinson, Angela Kapfhammer,  
Shirley Morgan

Art Director Sandra Underwood

Design Staff Tracey Jones, Heidi Maxedon,  
Kevin Quiggins

Production Assistant Cindy Jett

Chief of Typography Debbie Hartley

Typography Services  
Jody Doyle, Suzanne Benish Kurowsky

FPSS, Ag. Publications Enterprises, Inc.

President Lawrence C. Falk

General Manager Patricia H. Hirsch

Editorial Director James E. Reed

Asst. Editorial Director Jutta Kapfhammer

Executive Editor Courtney Noe

Creative Director Jerry McKiernan

Manager of Public Relations Holly Weaver

Administrative Assistant to the Publisher  
Judy Brashear

Asst. General Manager for Finance Donna Shuck

Bookkeeper Diane Moore

Advertising Accounts Bev Taylor

Dealer Accounts Judy Quashnock

Accounts Payable/ADP Lisa Ragan

Director of Fulfillment Services Bonnie Frowenfeld

Asst. Dir. of Fulfillment Services Sandy Apple

Customer Service Representative Beverly Bearden

Soft Sector on Disk Subscriptions Sandy Apple

Word Processor Manager Patricia Eaton

Chief of Production Services Melba Smith

Dispatch Janice Eastburn

Business Assistants Laurie Falk, Sharon Smith,  
Monica Wheat, Pam Workhoven

Advertising Coordinator Doris Taylor

Advertising Representative Kim Vincent

Advertising Assistant Debbie Baxter (502) 228-4492

WEST COAST OFFICE

Director, Cindy Shackleford

Advertising Representative, Shirley Duranseau

For Soft Sector Advertising and Marketing  
office information, see Page 62.

**SOFT SECTOR — The Monthly Magazine for Sanyo Personal Computer Users** (ISSN 8755-7480) is published every month of the year by FPSS, Ag. Publications Enterprises, Inc., The Falsoft Building, P.O. Box 385, Prospect, KY. 40059. Phone (502) 228-4492. **SOFT SECTOR — The Monthly Magazine for Sanyo Personal Computer Users**, **SOFT SECTOR ON DISK** and the **SOFT SECTOR** logotypes are registered ® trademarks of FPSS, Ag.

Second Class Postage Rates are paid at Prospect, Kentucky and additional offices. USPS 741-750. POSTMASTER: Send address changes to SOFT SECTOR, P.O. Box 385, Prospect, KY 40059. Forwarding Postage Guaranteed.

Entire contents copyright © 1986, by FPSS, Ag. **SOFT SECTOR — The Monthly Magazine for Sanyo Personal Computer Users** is intended for the private use and pleasure of its subscribers and purchasers and reproduction by any means is prohibited. Use of information herein is for the single end use of purchasers and any other use is expressly prohibited. All programs herein are distributed in an "as is" basis, without warranty of any kind whatsoever.

Sanyo MBC-550/555 and 775 are registered ® trademarks of the Sanyo Business Systems Corp.

Subscriptions to **SOFT SECTOR — The Monthly Magazine for Sanyo Personal Computer Users** are \$28 per year in the United States. Canadian rates are U.S. \$35. Surface mail to other countries is U.S. \$64, air mail U.S. \$85. All subscriptions begin with the next available issue.

Payment accepted by VISA, MasterCard, American Express, Cash, Check or Money Order in United States currency only.

# CONTENTS

## FEATURES

■ <b>KeyBusters/Bob Jack</b> .....	10
Easy cursor control with CalcStar	
■ <b>DataMaker/Dave W. Neuendorf</b> .....	15
A handy conversion utility	
■ <b>Electrical Cost Calculator/Mick McGuire</b> .....	19
Eliminate the math work from your home energy audit	
■ <b>Mind Jogger/Felipe Lebron</b> .....	28
Keep your "laundry list" up-to-date	
<b>A Desktop Delight — The MBC-885/Jim Pile</b> .....	36
An in-depth review of Sanyo's new desktop	
<b>BASIC Training/Fred Blechman</b> .....	40
A tutorial on the different dialects of BASIC	
■ <b>The Basics Of A BASIC Terminal Program/Mordecai Plaut</b> .....	43
Two simple terminal programs to help you get online	
■ <b>CHANGIT/Ray Robinson</b> .....	50
Get directional control of your cursor arrow keys	

## DEPARTMENTS

<b>Advertisers Index</b> .....	62
<b>Ask Sanyo</b> .....	18
A pipeline to Sanyo	
<b>Back Issue Order Form</b> .....	59, 60
<b>Business Sector/Charlotte &amp; Brian Stone</b> .....	56
Solutions to your applications problems	
<b>Clubs</b> .....	54
<b>Corrections</b> .....	13
<b>Letters To The Editor</b> .....	8
<b>Racksellers</b> .....	61
<b>Soft Soapbox/Belinda Kirby</b> .....	7
News and Comments	
<b>Soft Talk</b> .....	58
New products and services	
<b>Submitting Material</b> .....	59
<b>Subscription Information</b> .....	60

## REVIEWS

<b>Envoy/Artisoft, Inc.</b> .....	23
<b>OTC Stock Exchange/SoftSol</b> .....	24
<b>ProDesign II/American Small Business Computers</b> .....	25
<b>Sanyo ECR-360/Sanyo Business Systems Corp</b> .....	26
<b>Sanyo BASIC User's Handbook/Weber Systems</b> .....	24

Cover illustration copyright © 1986 by Sandra Underwood

■ The small disk symbols appearing beside features and regular columns indicate that the program listings with those articles are on this month's **SOFT SECTOR ON DISK**, ready to LOAD and RUN. For full details, see the **SOFT SECTOR ON DISK** ad on Page 27.

Pick from the largest selection of Sanyo software any company offers. All programs run on the Sanyo 550 series; those listed in boldface also run on the Sanyo 700 and 800 series and other IBM-compatible computers.

#### For everyone:

**BBS** (\$99.95) - bulletin-board system for your Sanyo.  
**Cornerman** (\$39.95) - sidekick for your Sanyo has calendar, notepad, calculator, dialer, even an ASCII table.  
**DI** (\$24.95) - advanced directory system sorts all files, even in subdirectories or on hard disks. Locates any file instantly.  
**M-Disk** (\$34.95) - classic RAM disk emulator makes your Sanyo super-fast at any disk-addressing operation.  
**Mi-Key** (\$34.95) - a key-change program. Type long strings with two or three keystrokes, or try out the Dvorak keyboard.  
**Mi-Term** (\$79.95) - terminal communication program helps your Sanyo talk to virtually any other computer system.  
**Mousestick** (\$34.95) - trick to make a joystick act like a mouse.  
**Printer Helper** (\$29.95) - controller helps Epson printers use their full range of features with your Sanyo.  
**Soft Spool** (\$34.95) - software print buffer and spooler keeps your computer working while the printer chugs along.  
**Solar Sim** (\$29.95) - educational solar simulation lets you estimate whether solar power is right for your home.  
**SuperDirectory** (\$39.95) - cataloger keeps track of all files on all your disks. Sorts, prints disk labels, more.  
**Type Right** (\$29.95) - training program makes you a faster, more accurate typist, helps prevent frustrating typos.

#### For businessmen:

**Business Agreements** (\$49.95) - attorney-prepared legal forms and contracts simplify your business needs.  
**Calendar** (\$24.95) - appointment book brings order to your busy life at work or at home.  
**MasterGraph III** (\$89.95) - business graphics package creates dramatic line, bar and pie graphs.  
**Mi-Mail** (\$79.95) - menu-driven business mailing system creates mailing labels, even a personal phone book.  
**Personal Money Manager** (\$49.95) - home financial program keeps track of your budget, projects fixed expenses.  
**Pledge** (\$199.95) - tracks pledges and special gifts to religious institutions, reports to givers and the treasurer.  
**Quick and Simple** (\$49.95) - menu-driven, down-to-earth list manager features easy input, several output options.

#### For graphics artists:

**Graffiti** (\$39.95) - an easy-to-use, basic drawing program.  
**Picasso** (\$99.95) - menu-driven, advanced free-form drawing package gives you absolute control of graphics.  
**FreezeFrame** (\$39.95) - versatile screen dump utility can be customized to take full advantage of your printer.

#### For programmers:

**Drive Timer Plus** (\$24.95) - utility checks disk drives, encodes files and provides menu-driven DOS file commands.  
**DS DOS Plus 2.11** (\$49.95) - MS-DOS enhancement package supports 80-track drives, IBM graphics, sorted directories.  
**EasyRecord** (\$199.95) - C-programmer's file utility manipulates files of all data types with easy-to-use functions.  
**EasyWindow** (\$199.95) - screen display manager makes custom windows easy from C-language programs.  
**Graphpac** (\$49.95) - package of graphics routines for Pascal, C and machine language programs.  
**Super Zap** (\$49.95) - full-featured disk editor lets you change anything anywhere on a disk. Fix disk errors with ease.  
**Transfer** (\$59.95) - data transfer program converts TRS-80 files to MS-DOS files, or vice-versa.

#### For gamers:

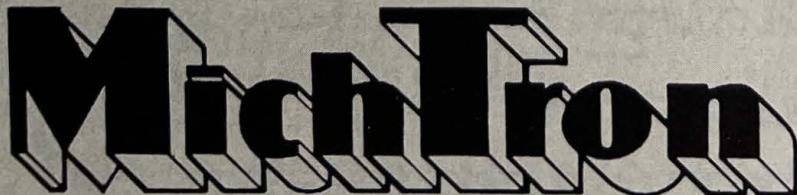
**Text adventure games:**  
**Adventure Disk #2** and **Adventure Disk #3** (\$34.95 each) - five unique games on each disk.

#### Arcade games:

**Cashman** (\$34.95) - take the money and run!  
**Demon Seed** (\$34.95) - first bats, then demons to defeat.  
**Major Motion** (\$29.95) - save the weapons van from attack.  
**Maz** (\$24.95) - find you way through the maze without being eaten by the prowling cat.  
**Mudpies** (\$34.95) - throw them at angry circus clowns, duck the clowns and their Indian clubs.  
**Robounce** (\$24.95) - robot aliens move through invisible force fields that deflect your shots.  
**Speed Racer** (\$29.95) - win the race - or at least survive!  
**Thunder Chief** (\$34.95) - destroy enemy ground forces as you fly the Thunder Chief on increasingly difficult missions.  
**Time Bandit** (\$39.95) - collect the treasures of the ages from 20 worlds, fifteen levels of play.

#### Strategy games:

**Checkmate** (\$39.95) - match wits with the chess computer.  
**DC-10** (\$39.95) - realistic instrument flight simulator, complete with emergencies.  
**Emperor** (\$34.95) - save the Roman Empire from the barbarians, and beware of your own generals.  
**FlipSide** (\$34.95) - try Reversi against live or computer foes.  
**King Arthur** (\$24.95) - your foresight and strategy could save Britain from invading Anglo-Saxons and Jutes..  
**Solitaire** (\$34.95) - and cribbage and blackjack and poker squares and klondike. Many hours of entertainment.  
**Tic Tac Toe and Cryptogram** (\$29.95) - two classics.



576 S. TELEGRAPH, PONTIAC, MI 48053  
ORDERS AND INFORMATION (313) 334-5700  
PRICES DO NOT INCLUDE SHIPPING AND HANDLING

**SHOOTING STAR**

In this game, the "shooting star" shoots at the happy face placed randomly on the bottom row of the screen. Press any key to make a shot and to continue after hitting the target. The number of attempts is continuously displayed in the upper left portion of the screen.

Getting the IF/THEN/ELSE's to do what I wanted was mainly trial and error. I'm still not exactly sure why this version works.

```
1 CLS:N=N+1:PRINT N:Z=INT(RND*74)+5:LOCATE 20,Z:PRINT CHR$(1):FOR I=1 TO 80:LOCATE 2,I:PRINT" *":A$=INKEY$:IF A$="" AND I<80 THEN NEXT:ELSE:FOR J=9 TO 160 STEP 3:PSET(I*8+2.5,J):NEXT:IF Z=1=I THEN SYMBOL(240,90),"HIT",7,7:C$=INPUT$(1):RUN:E  
LSE GOTO 1
```

*James C. Duchon  
Chicago, IL*

**SINEWAVES**

This program draws two sine waves, one above the other, in the same color. It then connects them with a line of a different color. The resulting design appears to be either a sort of undulating walkway or wall, depending on how you look at it.

The illusion of shading on the hills (or bends) is achieved by the peculiarities of the sine function. Pressing any key starts a new design in new colors.

```
1 WHILE I=0:CLS:LOCATE 1,1,Q:S=INT(RND*4  
)  
+2:E=(INT(RND*18)+3)*5:N=INT(RND*7)+1:A  
=INT(RND*7)+1:Z=25-(1*2):FOR X=0 TO 639  
STEP S:Y=100+SIN(X/E)*((8-1)*5):LINE (X,  
Y-59)-(X+Z,Y),N:LINE -(X,Y+29),A:LINE -(  
X+Z,Y+88),N:NEXT X:FOR T=1 TO 1200:NEXT  
T:WEND
```

*Jon McGuire  
Orange Park, FL*

## "MAKE YOUR SANYO 550 CP/M DATA COMPATIBLE FOR ONLY \$39.95!"

Intersecting Concepts Has The Solution To Your Computer Incompatibility

*"But will it work on my Sanyo?*



Yes! Now there's a new version of **MEDIA MASTER** available for Sanyo! Finally, there's an easy (and inexpensive) way to exchange information, transfer files, and *read, write and format* over 150 different CP/M and MS-DOS disks.

Already an accepted industry standard, **Media Master** is our direct disk-to-disk format conversion program. This \$39.95 product uses simple screen prompts that let you *read, write and format* up to 150 different 5 1/4" disks from CP/M, MS-DOS and PC-DOS operating systems.

So if you work on Sanyo 550 series computers at the office, but use a CP/M computer at home, now you can easily transfer files that would otherwise be "foreign" to your computer's operating system without buying expensive modems and communications software!

We also offer an entire family of solutions that solve computer incompatibility, like the problem of running CP/M software on MS-DOS machines.

To order **Media Master** for your Sanyo, call 800-628-2828, ext. 629. For additional product information on **Media Master Plus** and **Acceler-8/16** for the Sanyo 775 contact:

**INTERSECTING CONCEPTS**  
4573 Heatherglen Court  
Moorpark, CA 93021  
or call 805-529-5073.



# SOFT SOAPBOX

Often, we at SOFT SECTOR have taken time to review what can be done to make our magazine more informative, more stylish and more interesting. We always look for new ways to do things without disturbing the flow of editorial content, and we try to make things easier for you. We are not trying to confuse you, however. We simply want to improve what we're already offering — a resource to suit your needs.

Since "The First Great Soft Sector One-Liner Contest" has been such a success, we have decided to continue the contest but discontinue the name. As a result, you will now find the one-liners scattered throughout the magazine. They will not be listed in the table of contents, which means you will have to either look for them or be surprised when they appear. Naturally, the authors of the winning one-liners that are published will still receive a copy of SOFT SECTOR ON DISK for that month.

Something else we are doing differently is including the new Sanyo machines into our format. As you know, we began as a magazine specifically for the Sanyo MBC-550/555. However, as Sanyo has come out with their Video RAM Board and three new machines, and as many of you have either acquired a video board or one of the new Sanyo models, we have decided to incorporate coverage of

these to accommodate you. This is not to say we are abandoning the 555. Far from it! We just want to continue to meet the needs of our readers as they grow with us.

Many of you, we're sure, have begun to program in GW-BASIC since acquiring either the video board or an MBC-675, 775 or 885. We would like to encourage you to send in any programs you may have written in GW-BASIC. Since we have been advertising SOFT SECTOR as a magazine for *all* the Sanyo Personal Computers, we have had some inquiries as to why there were no programs in the magazine to run on these new machines. So, programmers, here's your chance to shine. And we are, of course, still looking for exciting new programs that you've written for the 555.

We would like to point out that "Input/Output" by Tim Purves will not be found in this issue. It will be resumed in the April issue. What you will find in this issue is an in-depth review of Sanyo's new desktop model, the MBC-885. Also, you will find six other programs we're sure you'll enjoy. One of particular interest, and well suited for use during the winter season, is "Electrical Cost Calculator." This program finds out where the energy problems are in your home or office and helps save you money.

As a brand-specific magazine, we are making every effort to zero in on what you need for your machine. We are making changes for you while we continue to adhere to the standard we established with the very first issue of SOFT SECTOR — to grow as you grow and to meet your individual needs as they change.

— Belinda Kirby

## 20 MEG HARD DISK & 512K RAM

\$799

1 YEAR WARRANTY  
30 DAY RETURN POLICY

### COMPLETE INTERNAL SUBSYSTEM FOR SANYO MBC 550/555

INCLUDES: ZOBEX CONTROLLER CARD WITH 512K RAM, 20 MEG SEAGATE ST-225 HARD DISK, POWER SUPPLY UPGRADE KIT, INSTALLATION SOFTWARE FOR MS DOS 2.11, AND INSTALLATION INSTRUCTIONS.

132 WALNUT-PLANO CENTER  
GARLAND, TX 75042

EPIC SALES, INC.

1-800-223-3742 ORDERS  
1-214-272-5724 INFO.



# LETTERS TO THE EDITOR

## CUSTOMIZED PROMPTS

*Editor:*

I enjoyed Danny Humphress' article on MS-DOS prompts (January '86, Page 12). For those beginners who are not sure how to avoid having to type in the customized prompt at each boot up, one way is to type the entire prompt line in an AUTOEXEC.BAT file.

I have another code to add to his list, and a question about three others. Typing PROMPT \$q will return the equal sign '=', as explained in *Running MS-DOS*, by Van Wolverton (Microsoft Press, 1984). I've discovered that the code "\$<" returns "File not found," "\$>" returns "File creation error," and "\$|" returns "Syntax error." Can Mr. Humphress give any information about these last three?

Bruce A. White  
Mt. Rainier, MD

*Editor's Note: The greater-than >, less-than < and vertical | symbols are used by MS-DOS to route input and output. (See "Mastering MS-DOS," March '85, Page 40.) To use these symbols in your prompt, you must substitute \$g for >, \$l for < and \$b for |.*

## STICKY SITUATION

*Editor:*

In SOFT SECTOR, January '86 on Page 50 in "Input/Output," Luis Rubio stated that his keyboard was sticking. I am having the same experience to a limited extent. The only keys that do it on mine are the ones in the upper row. If I am careful to push straight down they do not resist, but any forward force causes friction/binding that exceeds the force normally required to dispatch the character.

My fingers tell me that "we have exerted the force required, so go on to the next character." The result is I have to backspace and insert the missed character. When I brought this to the attention of the dealer who sold me the unit, his response was much

like yours: namely, "That is the first complaint I have heard, ours work fine." That dealer is no longer in business. I am living with the condition, but do find it irritating. Luis, you are not alone.

I do enjoy SOFT SECTOR immensely. It has been the major educational tool in my learning process. Fred Blechman's article, "Handy BASIC Hints," in the January issue did much to enhance a couple of programs I was struggling with. There are numerous others that are entertaining and/or informative.

William Vivotson  
Marysville, WA

*Editor:*

This is written in response to a reader, in the January '86 issue in "Input/Output" who was having keyboard problems.

I, too, have had a problem with sticky keys and keys that would not make contact. After much frustration, I finally disassembled the whole thing. It's not very difficult; it involves removing the six bottom plate screws, which exposes the back of the circuit board on which the key switches are mounted. Next, remove the three screws which hold the top plate (two on one end, one on the other). Then remove the "million" tiny screws that hold the circuit board in place. The top of the circuit board is then exposed, as well as the underside of the key mechanisms.

I initially tried aerosol contact cleaner, and it may indeed have improved the no-contact problem. However, plain old liquid dish soap and warm water (applied with a cotton swab) did the trick. No problems since!

Re-assembly is the reverse of the above, taking care not to bend anything.

Three cautions however, even for the novice:

Do this only with keyboard *unplugged*. Make sure all moisture is removed before re-applying power. Get *all* the cotton lint out before re-assembly.

Richard E. Radcliff  
Webster, NY

## PRINTING HANG UPS

*Editor:*

The patch to *WordStar* to disable the NUMLOCK and GRAPH keys on the Sanyo 555, as described in "Helpful Hints" (April '85, Page 86), does do that just fine.

However, it will also disable the "Stop Print" function when in *MailMerge*. For example, with the patch installed and when one wishes to print again a selected letter or label from a data file (.df), the program will hang after printing.

PAR  
AVION

This, of course, requires a reboot which is a nuisance. On the other hand, with the unpatched *WordStar*, typing P then Y after the printing is complete will restore one to the opening menu.

I am using *WordStar*, Version 3.3, DOS 2.11 (VB) and a Sanyo MBC-555-2 with the video board.

J.C. Flanders  
Knoxville, TN

## BUBBLE SORT

### Editor:

Each edition of *SOFT SECTOR* contains such excellent information and/or programs pertinent to the Sanyo 555 that I look forward to receiving it more and more each month.

Since I primarily use BASIC, the *BASIC Menu Program* submitted by Ray Robinson in the October, 1985 issue, was particularly welcome.

In using it, however, I found it useful to add a simple bubble sort to the program which provides an alphabetical listing of the programs. In the hope that others might appreciate this feature, the following additions to the listing can be very easily made:

```
205 GOSUB 500
500 '
510 Z%=-1
520 WHILE Z%
530 Z%=0
540 FOR I%=1 TO N-1
550 IF CH$(I%+2)>CH$(I%+3) THEN
    SWAP CH$(I%+2),CH$(I%+3)
    :Z%=-1
560 NEXT I%
570 WEND
580 RETURN
```

Since a provision is made for no more than 33 programs to be listed, the slow bubble sort is more than adequate and results in a list that is much easier to use. I hope this small contribution may be found useful by others.

Thank you again for publishing such an excellent magazine.

D.G. Larson  
Portland, OR

## CRY FROM THE WILDERNESS

### Editor:

I became aware of your magazine in September '85 and promptly took out a subscription with Molimerx. At the same time, I wrote to you to secure all available back issues. I am happy to report that I have now received them and am delighted with them.

Alas! The issues for September, October and November '84 are out of print and were not available. I am writing you now to ask if you could please publish my "plea" to your readers with hope that one of them may have a spare copy of any or all of these issues and would be prepared to part with them? They

can contact me at the above address or at the following UK address: 27 Elmhurst Gardens, TONBRIDGE, Kent TN10 3QT, England.

I trust this cry from the wilderness will not go unheeded. In the meantime, keep up the good work. You produce a truly great magazine unequal to anything available in this country (UK) and have enabled me to gain an immeasurable amount of use and fun out of my machine. Thank you!

James Lamb  
Kent, England

## AMPLE MEMORY

### Editor:

In regards to "Input/Output" column in the January '86 issue of *SOFT SECTOR* about the ability of the MBC-550/555 to run *dBASE III*: As the front of the *dBASE* documentation manual shows, the assumption about needing 384K to run *dBASE III* is incorrect. All an MBC-550/555 user needs is 256K and the video board. This applies to both Version 1.0 and Version 1.1.

The protection scheme is software oriented and allows only one copy at a time of the program disk to be made. The scheme is independent of the machine on which it is being operated.

I've been happily using *dBASE III* for quite a while now on my MBC-555.

Steve Emmett  
Herndon, VA

## CALCSTAR QUIRK

### Editor:

For anyone using *CalcStar*, I found a short cut to left justify a numerical entry.

Sanyo documentation lists /L before the number or the symbol over 6 (^) after the number; /L12/18/85 or 12/18/85^.

I hit the space bar before the number to left justify. You lose one space but gain speed.

For the many good articles and suggestions I have used from your magazine, I would like to add the above for those who don't know it already.

I feel fortunate that I purchased a Sanyo computer for many reasons but one being because of your very good magazine. Another is that in Sacramento, California we have an active user's group.

Lucile March  
Roseville, CA

## THE RIGHT CHOICE

### Editor:

I have seen all the ads and articles about RAM disks and adding memory to the Sanyo. I'm still confused, however, about making the right choices for my Sanyo 555-2.

We have upgraded to 256K, but would like faster access, such as the RAM disks would provide, and also greater memory. I understand my DOS 2.11 might not be able to utilize this added memory. What does one do about that?

Any chance of SOFT SECTOR running an article comparing the various RAM disks available and about ways to increase memory? We are the more recreational-type users, but do use our Sanyo quite a bit. Thank you for any assistance.

Carlene Merey  
Richmond, CA

*Editor's Note:* See Bob Jack's excellent article "Mega-DOS" (January '86 issue, Page 10) for adding more memory.

## BUGGY BASIC

### Editor:

I have discovered an apparent bug in Sanyo BASIC related to the use of a joystick, as described by Fred Blechman in "BASIC Training," November '85, Page 11.

The STICK command works fine to read the stick coordinates in Version 1.31, but attempting to read the trigger button via the STRIG command results in an "Undefined Line Number" error whenever the trigger is pressed.

Furthermore, the error cannot be programmed around via the ON ERROR/GOTO command. In Version 1.25, the STRIG function works fine, but the coordinates read with the STICK command constantly shift up and down, resulting in a cursor that jiggles around. The joystick is a CH Products Mach II, and works fine with non-BASIC programs.

Is there a later version of BASIC which corrects these problems, or do you know of a patch for one of the existing versions?

John Pasour  
Springfield, VA

*Editor's Note:* Sanyo's latest release of BASIC is Version 1.35. To receive this version, send your original system disk and \$15 to: Sanyo Business Systems Corp., 51 Joseph Street, Moonachie, NJ 07074.

## BY POPULAR DEMAND

### Editor:

I think your "Mega-DOS" article by Bob Jack is outstanding, but I need more information on adding the memory.

David S. Strout  
Lakeland, FL

*Editor's Note:* Due to the many requests we've had for this, look for an article by Bob Jack on piggybacking chips in the April '86 issue of *SOFT SECTOR*.



---

---

# Keybusters

By Bob Jack

# **As a self-installing, key-modification routine, KeyBusters will give you the ease of cursor control you may have found lacking in CalcStar**

**A**re you thinking of getting another spreadsheet program because *CalcStar* is too hard to use? Hold on! Before you spend your hard earned money, *KeyBusters* may be what you've been looking for all along.

*KeyBusters* is a self-installing, key-modifying program, designed to be used on the Sanyo with the *CalcStar* spreadsheet. It solves the problem of which control key to use to move the cursor where you want it.

*KeyBusters* does this by making use of the unused arrow keys on the numeric keypad. (Look for a description of the new keys and their cursor movement at the end of this article.) The good part is, it does not change the control keys. CONTROL-E still moves the cursor up, CONTROL-X still moves the cursor down, etc.

## **Set Up And Use**

For your convenience, the *KeyBusters* program is contained in the data statements in the BASIC program in Listing 1. The hardest part of this project will be to type the BASIC program in correctly. Take special care with the data statements.

Once you have the BASIC program typed in, save it and run it. It will create the file KBUSTERS.COM. Set up an AUTO

*Bob Jack* is a self-employed small businessman who has been programming, using and writing about personal computers for the past 10 years. On Delphi, in the MS-DOS SIG, he is known as BJ85. He may be contacted at 8371 White Road, Burbank, OH 44214; (216) 948-2059.

EXEC.BAT file to automate the whole process. The command table gives details on how to do this. Finally, copy the AUTOEXEC.BAT file and the KBUSTERS.COM file to your *CalcStar* working disk.

That's it! Congratulate yourself on a job well done. Now, every time you boot your *CalcStar* disk, it will prompt you for the date and time, install KBUSTERS and run *CalcStar*.

## **On The Technical Side**

The way *KeyBusters* works is to alter the console interrupt vector to point at the CHKKEY procedure. It then returns to DOS leaving itself in memory. Listing 2 contains the machine language source code.

When a key is pressed, the CHKKEY procedure performs the normal keyboard interrupt and gets the key value from the console input buffer. Next, it checks to see if the value is that of any of the arrow keys. If it is, CHKKEY alters the console buffer to the correct *CalcStar* key value.

*CalcStar* then operates as if you pressed the correct corresponding control key. The whole process is really kind of simple.

## **Looking Forward**

*KeyBusters* was designed to work with DOS 2.11 with IO version 1.0. However, it will work with any of the versions of DOS which work on the Sanyo by changing the value of the PUTPTR to point at that DOS's console input buffer.

Also, if you have another program which needs special keys, you might want to alter the values checked for and the values changed to. In this way, you can set up a custom-key program for yourself.

When all is said and done, before you buy another spreadsheet program, give *KeyBusters* a try. More than likely, you'll save yourself some money!

## **Keypad Description**

Arrow Up	Up one row
Arrow Down	Down one row
Arrow Left	Left one column
Arrow Right	Right one column
PG UP	Page up
PG DN	Page down
CONTROL + Arrow	Page left
Left	Page right
CONTROL + Arrow	Next row down — Column A
Upper Left Arrow	Press ENTER — goes to Cell A1 — or select cell
(Numeric Pad 7)	See instruction manual for TAB key cursor movement

## **Command Table**

Commands	Description
COPY CON AUTO	Console input to AUTOEXEC.BAT batch disk file.
EXEC.BAT ENTER	Date
DATE ENTER	Time
TIME ENTER	Install <i>CalcStar</i> key modification program
KBUSTERS ENTER	Run <i>CalcStar</i>
CS.COM ENTER	End console input — close disk file
^Z ENTER	

**Listing 1: KBUSTER.BAS**

```
10 'KEYBUSTER - CALCSTAR KEY MODIFICATION PROGRAM - for CalcStar number pad
20 'for standard SANYO 550 - 2.11 DOS - IO version 1.00
30 'by Bob Jack - January 1, 1986
40 '
50 CLS
60 PRINT "Press any key to create KBUSTER.COM ";
70 ANS$=INKEY$:IF ANS$="" THEN 70
80 PRINT:PRINT "One moment please"
90 OPEN "O",#1,"KBUSTER.COM"
100 FOR X=1 TO 288
110 READ HBS
120 OB$=CHR$(VAL("&H"+HBS))
130 PRINT #1;OB$;
140 NEXT X
150 OB$=CHR$(VAL("&H00"))
160 FOR X=1 TO 95
170 PRINT #1,OB$;
180 NEXT X
190 CLOSE #1
200 PRINT "All done"
210 END
220 DATA 0E,1F,E8,B3,00,75,0E,BA,F2,01,E8,E0,00,E8,B9,00
230 DATA BA,1F,06,CD,27,BA,09,02,E8,D2,00,CD,20,CD,64,50
240 DATA 53,06,9C,2B,C0,8E,C0,26,A1,92,01,8E,C0,26,8A,1E
250 DATA 29,0B,80,EB,02,80,E3,0F,B7,00,26,8B,87,2B,0B,3D
260 DATA 00,48,74,30,3D,00,50,74,31,3D,00,4B,74,32,3D,00
270 DATA 4D,74,33,3D,00,49,74,34,3D,00,51,74,35,3D,00,73
280 DATA 74,36,3D,00,74,74,37,3D,00,4F,74,38,3D,00,47,74
290 DATA 39,EB,3F,90,B8,05,12,EB,34,90,B8,18,2D,EB,2E,90
300 DATA B8,13,1F,EB,28,90,B8,04,20,EB,22,90,B8,12,13,EB
310 DATA 1C,90,B8,03,2E,EB,16,90,B8,01,1E,EB,10,90,B8,06
320 DATA 21,EB,0A,90,B8,1A,2C,EB,04,90,B8,09,0F,26,89,87
330 DATA 2B,0B,9D,07,5B,58,FB,CF,2B,C0,8E,C0,26,A1,90,01
340 DATA 8B,D0,26,A1,94,01,3B,C2,C3,FA,2B,C0,8E,C0,26,A1
350 DATA EC,03,26,A3,90,01,26,A1,EE,03,26,A3,92,01,B8,1D
360 DATA 01,26,A3,EC,03,8C,C8,26,A3,EE,03,FB,C3,B4,09,CD
370 DATA 21,C3,0D,0A,43,61,6C,63,20,4B,65,79,20,69,6E,73
380 DATA 74,61,6C,6C,65,64,0D,0A,24,0D,0A,41,6C,72,65,61
390 DATA 64,79,20,69,6E,73,74,61,6C,6C,65,64,0D,0A,24,20
```

**Listing 2: Machine language source code**

```
title Calc Star Key Modification Program
;
; equate area
;
nv      equ     100          ;new keyboard int. vector
thv      equ     nv+1        ;trap halt interrupt vector
norv    equ     251          ;normal keyboard int. vect.
newvec   equ     nv*4        ;offset address for new vec.
thvec    equ     thv*4        ;offset address for trap halt
norvec   equ     norv*4       ;offset address for norm vec.
putptr   equ     0b29h        ;pointer to stored character
getptr   equ     putptr+1     ;pointer to pick up character
conbuf   equ     getptr+1     ;console input buffer
;
; program area
;
```



## CORRECTION

My program, *Spool* (January '86, Page 51), contains a bug which locks up the system when a 64K buffer is requested. Using *Spool* with any other buffer size from 1K to 63K works as advertised.

If you would like to use a 64K buffer, the following corrections must be made to the BASIC listing on Page 52.

- 1) Replace the first four numbers in Line 92 with 73,04,80,47,11,10.
- 2) Replace the first five numbers in Line 93 with A3,35,02,B8,35.
- 3) Replace the number 6D in Line 96 with 6B.
- 4) Replace 588 which appears in lines 30 and 60 with 590.
- 5) Change the checksum, 50777, in Line 30 to 50899.

If you typed in the assembly language source code, it can be corrected by replacing the statement, ADC [BX+10H],0 (located four lines below the label OK:) with these two lines:

```
JNC $+6
ADD BYTE PTR [BX+11h],10h
```

My apologies to those inconvenienced by this error.

*Herbert Martello  
Whiteford, MD*



```

kbuster segment
org 100h
assume cs:kbuster, ds:kbuster
main proc far
begin: push cs
        pop ds
        call cmpint
        jnz retdos
        mov dx,offset msg1
        call dispmsg
        call setint
        mov dx,offset lbyte+400h
        int 27h
        mov dx,offset msg2
        call dispmsg
        int 20h
        ;return to dos

main endp
chkkey proc near
        int nv
        push ax
        push bx
        push es
        pushf
        sub ax,ax
        mov es,ax
        mov ax,es:[newvec+2]
        mov es,ax
        mov bl,byte ptr es:[putptr]
        sub bl,2
        and bl,0fh
        mov bh,0
        mov ax,es:[conbuf+bx]
        cmp ax,4800h
        jz chkk1
        cmp ax,5000h
        jz chkk2
        cmp ax,4b00h
        jz chkk3
        cmp ax,4d00h
        jz chkk4
        cmp ax,4900h
        jz chkk5
        cmp ax,5100h
        jz chkk6
        cmp ax,7300h
        jz chkk7
        cmp ax,7400h
        jz chkk8
        cmp ax,4f00h
        jz chkk9
        cmp ax,4700h
        jz chkk10
        jmp chkk91
chkk1:  mov ax,1205h
        jmp chkk90
chkk2:  mov ax,2d18h
        jmp chkk90
chkk3:  mov ax,1f13h
        jmp chkk90
chkk4:  mov ax,2004h
        jmp chkk90
chkk5:  mov ax,1312h
        jmp chkk90
chkk6:  mov ax,2e03h
        jmp chkk90
chkk7:  mov ax,1e01h
        jmp chkk90
chkk8:  mov ax,2106h
        jmp chkk90
chkk9:  mov ax,2c1ah
        jmp chkk90
chkk10: mov ax,0f09h
chkk90: mov es:[conbuf+bx],ax

```

```

chkkey: popf          ;restore registers
        pop    es
        pop    bx
        pop    ax
        sti
        iret
chkkey endp

;
; utility area
;

cmpint proc    near      ;check interrupt structure
        sub    ax,ax
        mov    es,ax
        mov    ax,es:[newvec] ;set es to vector segment
        mov    dx,ax
        mov    ax,es:[thvec]  ;get new interrupt vector
        cmp    ax,dx
        ret

cmpint endp

setint proc    near      ;save in dx
        cli
        sub    ax,ax
        mov    es,ax
        mov    ax,es:[norvec] ;get Trap Halt vector
        mov    es:[newvec],ax
        mov    ax,es:[norvec+2]
        mov    es:[newvec+2],ax
        mov    ax,offset chkkey ;is new interrupt set
        mov    es:[norvec],ax
        mov    ax,cs
        mov    es:[norvec+2],ax
        sti
        ret

setint endp

dispmsg proc   near      ;set up new interrupt vector
        mov    ah,09h
        int    21h
        ret

dispmsg endp

;
; message area
;

msg1   db      0dh,0ah,"Key Buster installed",0dh,0ah,"$"
msg2   db      0dh,0ah,"Already installed",0dh,0ah,"$"
lbyte  db      " "
                    ;last byte in program
kbuster ends
end    begin

```



S



**PERIPHERAL  
PRODUCTS  
DISTRIBUTING**

- **RS-232 INTERFACE** at an unbeatable price for the MBC-55X. Top quality and full warranty. **\$39.00**

- **DATA COMMUNICATIONS PACKAGE!**

Get online with the Volksmodem 300 baud modem, cable, RS-232 and the Envoy communications software. **\$149.00**  
Same package with the Volksmodem 300/1200 **289.00**

- **MEMORY "CHEAP CHIP" DEAL!**

When you order any other item in this ad you can get the 150ns memory chips at a fantastic price. **64k \$12.00**  
**128k 23.00**

- **WHY SHOULD YOU BUY FROM US?**

No additional charge for MC, VISA or COD orders. Free shipping via

UPS ground on orders over \$25.00. Same day shipping (if order placed by 2:00 MST). Next day and 2 day air services available.

- **BATTERY BACKED-UP REAL TIME CLOCK** for the MBC-55X. Retain the correct date and time when the power is off. Not affected by disk I/O like the internal clock is. Includes software. **\$89.00**

• Volksmodem 300/1200 baud modem.....	\$199.00
• Volksmodem 300 baud modem.....	59.00
• Cable for above Volksmodems .....	10.00
• Envoy communications software .....	44.00
• Intellicom communications software .....	66.00
• Comp-u-serve start-up kit .....	29.00
• The Source start-up kit .....	49.00
• Memory, Prime 150ns chips.....	64k 16.00 128k 32.00
• Bulk diskettes, 20 per package .....	SSDD 16.00 DSDD 20.00

**PERIPHERAL PRODUCTS  
DISTRIBUTING**  
P.O. BOX 11986  
TUCSON, ARIZONA 85734

**(602) 881-4280**

Allow 18 days for  
personal checks  
AZ residents add 7% tax

# DataMaker

## A utility to convert a binary machine language file to BASIC data statements

By *Dave W. Neuendorf*

**L**et's say you have just finished a 2000-byte machine language subroutine that you want to submit to SOFT SECTOR for publication. It works great when your BASIC program calls it from a binary file, created by the EXE2BIN utility from your linker output. Now you just have to convert the binary data into BASIC DATA statements that SOFT SECTOR readers can type in without having to buy the Microsoft Macro Assembler (MASM). If the routine is so simple that the linker does not change any addresses in the code, you could just *manually* code all of those DATA statements from the numbers in the .LST file from MASM. I'm not even sure what you could do if the linker has to change a lot of addresses; perhaps use a dump from DEBUG. All of the alternatives are messy, and involve

*Dave Neuendorf holds a bachelor's degree in chemistry, a master's in metallurgy, and is currently employed as an extractive metallurgist. He programs in 6502 and 8088 assembler, BASIC and FORTH. Dave and his wife, Patti, a computer analyst, have established a software development firm, NeuSystems. The author may be contacted at 281 Continental Dr., Pottstown, PA 19464, (215) 327-2970.*

you in the kind of dog-work you bought a computer to do. With that situation in mind, I wrote *DataMaker* to do the binary-to-data conversion — automatically!

To use *DataMaker* with either Sanyo BASIC or GW-BASIC, simply assemble and link your machine language routine, and use EXE2BIN to convert the .EXE file from the linker to a binary form. A binary file is simply a copy of the routine exactly as it exists in RAM when it has been installed in working form. Run *DataMaker*, answering the prompts for the binary filename and size in bytes, the DATA statement filename and the starting line number of the series of DATA statements to be created. The program will create an ASCII file of data statements readable by either version of BASIC. Merge the data statement file into your calling BASIC program, add some code to READ and POKE the values, and your masterpiece is ready for submission to SOFT SECTOR.

As written, *DataMaker* produces lists of hexadecimal numbers in the DATA statements; 10 numbers per line. Decimal numbers can be produced by replacing the HEX\$ function appearing in various places with STR\$. To alter the number of numbers per DATA statement, change the variable NUMPERLINE in Line 120 to the value you choose.

### The listing: HEXDAT.BAS

```
10 REM *** DataMaker ****
20 REM *** by David W. Neuendorf, December 1985
30 REM ***
40 REM *** A utility to convert binary machine language code files to BASIC
50 REM *** DATA statements, for publication in Soft Sector articles.
60 REM ****
```

```

70 REM
80 INPUT "Enter name of binary file:",BIN$
90 INPUT "Enter the size in bytes of the binary file:",FSIZE
100 INPUT "Enter name of DATA statement file to be created:",BDATA$
110 INPUT "Enter the starting line number of the DATA statements:",L%
120 NUMPERLINE=10
130 OPEN "R",#1,BIN$,NUMPERLINE
140 OPEN "O",#2,BDATA$
150 FIELD #1,NUMPERLINE AS A$:REM *** Read bytes from binary file *****
160 FOR X%=1 TO INT(FSIZE/NUMPERLINE):REM *** Main loop *****
170 GET #1,X%:B$=HEX$(ASC(LEFT$(A$,1))):REM *** Read, convert to integers *****
180     FOR Y%=2 TO NUMPERLINE
190         B$=B$+", "+HEX$(ASC(MID$(A$,Y%,1)))
200     NEXT
210 B$=STR$((X%-1)*10+L%)+" DATA "+B$:REM *** Build DATA statement *****
220 PRINT #2,B$:REM *** Save DATA statement in file *****
230 NEXT
240 REMNANT=FSIZE-NUMPERLINE*INT(FSIZE/NUMPERLINE):REM *** Find no. bytes left
250 IF REMNANT=0 THEN 350
260 CLOSE #1:OPEN "R",#1,BIN$,1:REM *** Change record length to just enough ***
270 FIELD #1,1 AS A$
280 GET #1,(X%-1)*NUMPERLINE+1:B$=HEX$(ASC(A$)):REM *** Convert last bytes *****
290 IF REMNANT=1 THEN 330
300     FOR Y%=2 TO REMNANT
310         GET #1,(X%-1)*NUMPERLINE+Y%:B$=B$+", "+HEX$(ASC(A$))
320     NEXT
330 B$=STR$((X%-1)*10+L%)+" DATA "+B$
340 PRINT #2,B$
350 CLOSE #1:CLOSE #2
360 END

```



## We take the BYTE out of high prices!

**Comp-U-Type**

SOFTWARE	
TURBO TUTOR .....	.29
TURBO TOOLBOX .....	.39
MULTIPLAN .....	.129
PFS: WRITE .....	.79
PFS: FILE .....	.79
PFS: GRAPH .....	.79
PFS: REPORT .....	.79
PFS: PLAN .....	.79
ACCOUNTS RECEIVABLE .....	.69
ACCOUNTS PAYABLE .....	.69
INVENTORY .....	.69
GENERAL LEDGER .....	.69
ORDER ENTRY .....	.69
PAYROLL .....	.69
RECRUITER .....	.59
APPOINTMENT BOOK .....	.39
PICASSO .....	.79
FREEZE FRAME .....	.34
TIME BANDIT .....	.34.95
MAJOR MOTION .....	.24.95
CASHMAN .....	.34.95
DEMON SEED .....	.34.95
MUDPIES .....	.34.95
SOLITAIRE .....	.34.95
SNARE THE SQUARE .....	.29.95
MATH CASTLE .....	.29.95
TRIVIA MANIA .....	.34.95
STATES & CAPITALS .....	.24.95

PRINTERS	
PANASONIC KX-P1080 .....	.199
KX-P1091 .....	.269
KX-P1092 .....	.399
KX-P1093 .....	.649
JUKI 6000 DAISYWHEEL .....	.169
JUKI 6100 DAISYWHEEL .....	.389
JUKI 6300 DAISYWHEEL .....	.695
QUADJET INKJET COLOR .....	.399

SPECIALS	
128K RAM UPGRADE .....	18.95
TEAC 55B (360K DISK DRIVE) .....	109
TEAC 55F (800K DISK DRIVE) .....	119
MEMORY EXPANSION BOARD .....	CALL
VIDEO RAM BOARD .....	BEST PRICE
LOTUS 1-2-3 .....	.309.95
FLIGHT SIMULATOR .....	.39.95
TURBO PASCAL 3.0 .....	.49.95

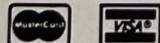
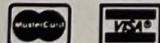
MONITORS	
SANYO 8112 GREEN .....	CALL
SANYO 8212 AMBER .....	FOR
SANYO CRT 30 .....	BEST
SANYO CRT 36 .....	PRICE
SANYO CRT 50 COLOR .....	CALL
SANYO CRT 70 COLOR .....	CALL
SANYO CRT 80 COLOR .....	CALL

ACCESSORIES	
KEYBOARD EXTENDER CABLE .....	9.95
COILED EXTENDER CABLE .....	12.95
PARALLEL PRINTER CABLE .....	24.95
RS-232 M TO M CABLE .....	23.95
TILT/SWIVEL STAND .....	19.95
DUST COVER SETS .....	CALL
NASHUA DS/DD DISKS .....	15.95
MAXELL DS/DD DISKS .....	19.95

COMMUNICATIONS	
VOLKSMODEM 300 .....	.59
CABLE FOR VOLKSMODEM .....	.12
ANCHOR MARK X 300 BAUD .....	.129
SMARTTEAM 1200 BAUD .....	.219
RS-232C PORT .....	.49
COMPUSERVE STARTER KIT .....	.29
THE SOURCE STARTER KIT .....	.49
MI-TERM MODEM SOFTWARE .....	.59

MANUALS	
WEBER MBC-550 USER'S GUIDE .....	15
WEBER MBC-550 BASIC GUIDE .....	15
WEBER BUSINESS PROGRAMS .....	15
SANYO BASIC REFERENCE .....	30
SANYO MS-DOS 2.11 MANUAL .....	45
SANYO WORDSTAR REFERENCE .....	35
SANYO REPORTSTAR REFERENCE .....	45
SANYO DATASTAR REFERENCE .....	30

MON - FRI 10 - 9  
SATURDAY 9 - 9  
SUNDAY 12 - 5



**Comp-U-Type**  
P.O. Box 777, Millersville, MD 21108

A DIVISION OF GLOBAL CONSULTING INC.

**1-800-545-1555**

INQUIRIES &  
MARYLAND  
(301) 987-1550  
(301) 987-4272

ORDERING INFO: For shipping add 3% - \$3.00 minimum. Visa and MasterCard add 3%. MD residents add 5% sales tax. Personal checks - allow 7-10 days to clear NO CODs. No returns accepted without prior authorization. All returned merchandise subject to 15% restocking fee. Write for free Sanyo Catalog.

# GET THE KNOW-HOW TO REPAIR EVERY COMPUTER ON THIS PAGE.

## Learn the Basics the NRI Way—and Earn Good Money Troubleshooting Any Brand of Computer

The biggest growth in jobs between now and 1995, according to Department of Labor estimates, will occur in the computer service and repair business, where demand for trained technicians will actually double.

You can cash in on this opportunity—either as a fulltime corporate technician or an independent service-person—once you've learned all the basics of computers the NRI way. NRI's practical combination of "reason-why" theory and "hands-on" building skills starts you with the fundamentals of electronics, then guides you through advanced electronic circuitry and on into computer electronics. You also learn to program in BASIC and machine language, the essential languages for troubleshooting and repair.

## You Build—and Keep—a 16-bit Sanyo personal computer

The vital core of your training is the step-by-step building of the 16-bit Sanyo MBC-550 series computer. Once you've mastered the details of this state-of-the-art machine, you'll be qualified to service and repair virtually every major brand of computer, plus many popular peripheral and accessory devices.

With NRI training, you learn at your own convenience, in your own home. You set the pace—without classroom pressures, rigid night-school schedules, or wasted time. You build the Sanyo IBM compatible computer from the keyboard up, with your own personal NRI instructor and the complete NRI technical staff ready to answer your questions or give you guidance and special help whenever you need it.

Praised by critics as the "most intriguing" of all the IBM-PC compatible computers, the new Sanyo uses the same 8088 microprocessor as the IBM-PC and



# AND MORE.

features the MS/DOS operating system. As a result, you'll have a choice of thousands of off-the-shelf software programs to run on your completed Sanyo.

Your NRI course includes installation and troubleshooting of the "intelligent" keyboard, power supply, and disk drive, plus you'll check out

the 8088 microprocessor functions, using machine language. You'll also prepare the interfaces for future peripherals such as printers and joysticks.

## 100-Page Free Catalog Tells More

Send the coupon today for NRI's big 100-page color catalog on NRI's electronics training, which gives you all the facts about NRI courses in Microcomputers, Robotics, Data Communications, TV/Video/Audio Servicing, and other growing high-tech career fields. If the coupon is missing, write to NRI Schools, 3939 Wisconsin Avenue, NW, Washington, DC 20016.



Your NRI course includes the Sanyo 16-bit IBM compatible computer with 128K RAM, monitor, double density/double sided disk drive, and "intelligent" keyboard; the NRI Discovery Lab®, teaching circuit design and operations; a Digital Multimeter; Bundled Spread Sheet and Word Processing Software worth over \$1000 at retail—and more.

**NRI**

SCHOOLS  
McGraw-Hill Continuing Education Center  
3939 Wisconsin Avenue, Washington, DC 20016

We'll give you tomorrow.

**CHECK ONE FREE CATALOG ONLY**

- Computer Electronics with Microcomputers
- Data Communications
- Robotics & Industrial Controls
- Video Electronics Servicing
- Electronic Design Technology
- Digital Electronics



228-036

For Career courses  
approved under GI bill,  
 check for details.

- Satellite Communications
- Communications Electronics
- Industrial Electronics
- Basic Electronics
- Telephone Servicing
- Small Engine Servicing
- Appliance Servicing

- Automotive Servicing
- Air Conditioning, Heating, Refrigeration, & Solar Technology
- Building Construction
- Locksmithing & Electronic Security

Name (Please Print)

Age

Street

City/State/Zip

Accredited by the National Home Study Council

000-000



# electrical cost calculator

Eliminates the math work from  
an energy audit of your home or office

By Mick McGuire

If your house is anything like mine, it's chock full of "energy monsters." Energy monsters are those little electrical goodies that populate American homes and seem to multiply like rabbits. America runs on electricity — and you pay for it!

ENERGY.BAS was written to help you identify those items in the house that are responsible for your high electric bills. It's an easy-to-use, self-explaining piece of software that takes the math work out of an electrical audit of your home or office.

## Options

The program will prompt you to press ENTER if you already know your kwh costs. If you do not know, you will need three previous electrical bills. Many electrical bills do not have a kwh cost breakdown. I obtained my kwh costs from a circular the local electric cooperative sent to its members. You can either research that, or just use three of your bills. If you use your bills, it may be a good idea to deduct the fixed costs from them before using the figures given.

Fixed costs are those that stay the same month after month; for example, things such as administrative costs and member fees. How these fixed costs affect your bill

will determine whether or not you wish to include them in your computations. Some users of ENERGY.BAS preferred to include them as they felt it was indeed part of their electrical costs. I prefer to exclude them because I think they artificially inflate the kwh costs. Either way you decide to do it, the difference usually only amounts to pennies.

The program will ask if you wish to use your printer. If you do, the figures will be printed in columns — spreadsheet style. The printer option is handy for comparing one item to another, so you can see which items in your home or office are energy robbers. What you see on the screen will be unaffected by the printer output.

You will be asked if the appliance is 110 or 220 volts. This information can be found on the label. In general, most American appliances (except for stoves, air conditioners, and clothes dryers) are 110 volt. The label may say 115 or 120. In that case, use 110 as the correct value.

Another option you will see may confuse you. Almost all electrical appliances will list, (on their labels), amperage or watts. Either can be used to figure costs, but an extra step is taken by the program when amperage is used. You will not see any difference in program execution, but make sure you have the correct wattage or amperage values from your appliance. When you are looking at lamps, use the values on the bulbs, expressed in watts. The wattage on the bottom of most lamps is merely the maximum size bulb allowed. If there is more than one bulb on the lamp, add the values together (example: one 25W and one 75W bulb, used at the same time, equals one 100W bulb).

## Modifications

There are several ways to change ENER-

GY.BAS to fit your own individual needs. If you hate typing, you may eliminate lines 450 through 510 if you are already familiar with watts and amps. You may also eliminate lines 110 through 140 if you won't need information on using the three electrical bills as a basis for your cost analysis. Remember though; someone using the program later on may need this information. If you will be the only one to use it, leave the lines out. If others will use the program, take the time to include them.

If you have a monochrome monitor, you might want to change the color values throughout the program to make everything more legible. I have both a color and a monochrome monitor, and find that I can read everything OK on either screen, but you may not. ENERGY.BAS is optimized for a color display. If you have the DIP switches inside your computer properly set, you should experience no problems. (DIP switch settings should be one ON, and the other three OFF).

If you are the impatient type, you can eliminate the CIRCLE and PAINT routines in lines 620 through 690. The program will run faster the first time, but the resulting display will be visually boring. Again, I recommend you leave these lines in, but the program will run OK without them. If you do leave them in, only the first run will be slow. If you eliminate 620 through 690, leave Line 620 in, with only a CLS command.

## Nuts and Bolts

The math used in most of the algorithms is very simple. I'll provide you with a short course in electrical theory so you technophiles can dissect the program. Kilowatt hours (kwh) is basically just a

Mick McGuire has been writing computer-related magazine articles since 1979 and is familiar with operation and programming on 13 different computer systems. The Sanyo MBC-550/555 is his computer of choice and his work has been featured in SOFT SECTOR on previous occasions. He may be contacted at 2234 George Wythe Rd., Orange Park, FL 32073; (904) 272-5596.

unit of measurement used by the power company to measure how much electricity you use. One thousand watts of power, used for one hour, equals one kwh. Two hundred watts of power, used for five hours, also equals one kwh, etc.

For our purposes, we will discuss only four electrical units of measurement. The first is voltage, or volts. In some countries, voltage is called electrical pressure and this is a very good description. Voltage can be described as the *force* behind electrical energy. The second unit, amperage or amps, can be thought of roughly as the *volume* or *amount* of electrical energy. A third value, resistance, is anything that opposes or restricts the flow of electricity.

Think of a piece of wire, with electricity "flowing" through it, as a piece of garden hose, with water flowing through it. In the garden hose, the water is under pressure. Lets say it's 40 pounds per square inch (psi). In the wire, the pressure is in volts. Lets say it's 110 volts. In both, when the water or electricity is not being used for anything (not "flowing"), the pressure (or voltage) is still there. It's the force that makes the water (or electricity) "move," when the demand for it is present. There are many names for voltage; including "potential," "electromotive force" (emf), "pressure" and sometimes just "juice!"

In the water hose, the amount of water can be expressed in gallons or liters. Only when the water is flowing can any be gathered to measure the amount. Shut the hose off and no water flows. Therefore, zero liters of water can be collected. The wire with electricity acts the same way. Remember, amperage roughly equates to the amount of electricity being used. Only when electricity is flowing down the wire can amperage be measured. The difference is, you can't catch amps in a bucket. It can be measured, but we won't go into that here.

Put a kink or crimp in the water hose, and the flow of water stops. The pressure is still there (the potential is still there), but nothing comes out the end. What you are doing is adding resistance to the flow. The more resistance, the less flow, until the flow completely stops. It's the same with the wire. The resistance can't be seen as

it can in the case of the water hose, but it's there. Too much resistance, and you won't get any flow of electricity. I won't go beyond this point with resistance,

Almost all of the above information is used in the formulas ENERGY.BAS uses. The following is a line-by-line explanation:

Lines 10 through 70	Initialization
Lines 80 through 90	Cost per kwh known?
Line 100	Input cost per kwh if known
Lines 110 through 230	Input kwh and cost for three bills
Lines 240 through 430	Allows user to change values input from bills
Lines 440 through 500	Text
Lines 510 through 540	Printer output if desired
Lines 550 through 560	Clear screen and jump to 610 if cost per kwh is known
Lines 570 through 600	Converts bill values to ACPWH (actual cost per kilowatt hour)
Line 610	Converts ACPKWH to ACPWH (actual cost per kilowatt hour)
Lines 620 through 740	DRAW and PAINT circle
Lines 750 through 950	Input values from appliance label
Line 960	Convert amps to watts
Line 970	GOSUB to line erase
Lines 980 through 1030	Screen print of values
Line 1040	Jump if printer is used
Lines 1050 through 1140	Erase values from screen
Lines 1150 through 1160	Subroutine to ask for values
Lines 1170 through 1200	Used by author to find screen locations
Lines 1210 through 1260	Printer output
Line 1270	Prints two blank lines

because it's not directly involved with what we're doing.

With a water hose, if you lower the resistance, and/or increase the pressure, you will greatly increase the amount of water delivered. Increase the size of the hose (this unrestricts or lowers resistance), or increase the pressure and more water is provided. The same can be said of the wire. Increase the size of the wire (or lower the resistance in some other way), and/or increase the voltage (pressure), and you will increase the amount of electricity (amps) delivered. The formulas look like this:  $E=I \cdot R$ ,  $I=E/R$  or  $R=E/I$ , where 'I' is amps, 'E' is volts and 'R' is resistance.

The third value, watts, is not directly analogous to the water hose example. Watts is simply a unit of power, computed by multiplying the voltage times the amperage ( $W=E \cdot I$ ), where 'W' is watts, 'E' is volts and 'I' is amps. One kilowatt, as I said before, is merely one thousand watts of power.

You may have to become creative to effectively figure out how long certain items are running in your home. Your furnace is a good example. You may have to record how many times and how long it cycles in a typical hour of use, and multiply that by 24 to get a reasonable figure. Things like air conditioners and heaters vary greatly in use, depending on the time of year and the weather. You're on your own on this one. I spend a great deal more money on air conditioning than on heating, so I based my analysis on an average of daytime and nighttime use during two "typical" late spring days. Hot water heaters are often another difficult item to get figures on. In my case, I have my heater on a timer so I have a good solid figure to base my calculations on. You may have to do some guessing or devote some time to actually checking your heater. Most other items in the home are easy to estimate.

\* \* \*

#### The listing: ENERGY.BAS

```

10 COLOR 0,3
20 CLS
30 WINDOW (0,0)-(639,199)
40 VIEW(0,0)-(639,199)
50 SYMBOL(10,10)," ELECTRICAL COST ANALYSIS",3,4
60 LOCATE 10,1
70 PRINT
80 PRINT " If you know how much your electricity costs per KWH, then just press
ENTER."
90 INPUT " If you do not know your cost per KWH, type 'N' and then press ENTER.
";A$
100 PRINT:IF A$="" THEN INPUT " COST PER KWH FROM YOUR BILL IS ";ACPKWH:GOTO 44
110 PRINT "You will be asked to look at and get information from three of your electric"

```

```

120 PRINT "bills, to arrive at a fairly accurate average of your kilowatt-hour usage"
130 PRINT "and your total cost for the periods specified. Use the specified cost"
140 PRINT "printed on your bills, minus fixed charges."
150 PRINT STRING$(79,79)
160 FOR A=1 TO 3
170 GOSUB 1150:PRINT "the total KWH usage";
180 INPUT K(A)
190 GOSUB 1150:PRINT "total charge (cost) for the period ";
200 INPUT C(A)
210 PRINT
220 NEXT A
230 CLS
240 PRINT "T H E S E     A R E     T H E     V A L U E S     Y O U     U S E D :"
250 PRINT
260 PRINT "BILL #", "KWH", "COST"
270 FOR A=1 TO 3
280 PRINT A, K(A), C(A)
290 NEXT A
300 PRINT
310 PRINT "IS THIS CORRECT (Y OR N)?"
320 INPUT A$: IF A$="Y" OR A$="y" THEN 440
330 INPUT "WHICH BILL (1 or 2 or 3) DO YOU WISH TO CORRECT";A
340 IF A<1 OR A>3 THEN PRINT "INCORRECT BILL NUMBER":GOTO 240
350 PRINT "SELECT ONE:"
360 PRINT "K to change KWH, on bill #";A
370 PRINT "C to change COST on bill #";A
380 PRINT "Q to Quit this section of program."
390 A$=INKEY$: IF A$="" THEN 390
400 IF A$="q" OR A$="Q" THEN 440
410 IF A$="K" OR A$="k" THEN INPUT "NEW KWH VALUE ";K(A)
420 IF A$="C" OR A$="c" THEN INPUT "NEW COST FIGURE IS ";C(A)
430 GOTO 230
440 CLS
450 PRINT
460 PRINT "This section will allow you to input either watt values or ampere (amp) values"
470 PRINT "so that this program can give you a cost per hour, day, month, and year"
480 PRINT "readout for that particular piece of equipment. Just find the label or plate"
490 PRINT "which gives the wattage and/or ampere rating, and input it. Watts may be"
500 PRINT "expressed as 'W' or 'watts', and amperes may be 'A' or 'a' or 'amps'."
510 PRINT
520 INPUT "Do you wish to output values to your printer (Y or N)";P$
530 IF P$="y" THEN P$="Y"
540 IF P$="Y" THEN LPRINT "Name", "Cost/Hr";TAB(30); "Hr/Use/Day";TAB(46); "$/Day";
TAB(57); "$/Mo." TAB(67); "$/Yr"
550 CLS
560 IF A$="" THEN 610
570 FOR A=1 TO 3
580 CPKWH(A)=K(A)/C(A)
590 NEXT A
600 ACPKWH=(CPKWH(1)+CPKWH(2)+CPKWH(3))/3
610 ACPWH=ACPWH/1000
620 CLS:FOR B=0 TO .75 STEP .25
630 C=B+.25
640 CIRCLE(288,100),155,B,-C
650 NEXT B
660 PAINT(284,99),6,0
670 PAINT(292,99),6,0
680 PAINT(286,177),6,0
690 PAINT(290,177),6,0
700 COLOR 0:LOCATE 10,7:PRINT "COST/HOUR";
710 COLOR 1:LOCATE 18,7:PRINT "COST/MONTH";
720 COLOR 5:LOCATE 10,57:PRINT "COST/DAY";
730 COLOR 4:LOCATE 18,56:PRINT "COST/YEAR";
740 COLOR 0:GOSUB 1270
750 INPUT "NAME OF ELECTRICAL DEVICE";N$
760 COLOR 1:GOSUB 1270

```



```

770 INPUT "NUMBER OF HOURS EACH DAY THAT IT IS OPERATING";NH
780 LOCATE 1,1
790 IF NH<=0 OR NH>24 THEN PRINT "TRY AGAIN!!! ";:GOTO 770
800 COLOR 4:GOSUB 1270
810 INPUT "IS THE OPERATING VOLTAGE 110 OR 220";VOLT
820 GOSUB 1270
830 IF VOLT=110 OR VOLT=220 THEN 840 ELSE PRINT "110 OR 220 ONLY!!! ";:GOTO 810
840 COLOR 0:GOSUB 1270
850 PRINT N$;" operates ";NH;" hours a day, on ";VOLT;" volts."
860 LOCATE 2,1
870 INPUT "IS THIS CORRECT (Y or N)";HS
880 IF HS="n" OR HS="N" THEN GOSUB 1270:PRINT "TRY AGAIN: ";:GOTO 750
890 COLOR 4:GOSUB 1270
900 INPUT "(W)atts or (A)mps";VS
910 IF VS="w" THEN V$="W" ELSE IF VS="a" THEN V$="A"
920 GOSUB 1270
930 IF V$="W" THEN INPUT "# OF WATTS LISTED ON APPLIANCE LABLE ";WATT
940 COLOR 4:GOSUB 1270
950 IF V$="A" THEN INPUT "# OF AMPS LISTED ON THE APPLIANCE LABLE ";AMP
960 IF V$="A" THEN WATT=AMP*VOLT
970 GOSUB 1270
980 PRINT N$;" operates ";NH;" hours a day, on ";VOLT;" volts."
990 PRINT "WITH AN AVERAGE COST PER WATT HOUR OF ";ACPWH;" CENTS.";
1000 COLOR 0,6:LOCATE 10,20:PRINT " $";:PRINT USING"##.####";(ACPWH*WATT)/100;
1010 COLOR 1,6:LOCATE 18,21:PRINT " $";:PRINT USING"####.##";((ACPWH*WATT)*NH)*28)/100;
1020 COLOR 5,6:LOCATE 10,38:PRINT " $";:PRINT USING"####.##";((ACPWH*WATT)*NH)/100;
1030 COLOR 4,6:LOCATE 18,38:PRINT " $";:PRINT USING"####.##";((ACPWH*WATT)*NH)*365)/100;
1040 IF P$="Y" THEN GOSUB 1210
1050 COLOR 0,3:LOCATE 23,1:INPUT "PRESS ENTER TO DO ANOTHER";XS
1060 COLOR 6,6
1070 LOCATE 10,20:PRINT STRING$(14,32);
1080 LOCATE 18,21:PRINT STRING$(14,32);
1090 LOCATE 10,38:PRINT STRING$(14,32);
1100 LOCATE 18,38:PRINT STRING$(14,32);
1110 COLOR 0,3
1120 LOCATE 2,1:PRINT STRING$(60,32);
1130 LOCATE 23,1:PRINT STRING$(30,32);
1140 LOCATE 1,1:GOTO 740
1150 PRINT "On bill #";A;," what is ";
1160 RETURN
1170 GCURSOR(100,100), (GX,GY),0
1180 LOCATE 1,1
1190 PRINT GX;"/";GY
1200 GOTO 1170
1210 LPRINT N$;;
1220 LPRINT USING"##.####";(ACPWH*WATT)/100;TAB(30);NH;TAB(44);
1230 LPRINT USING"####.##";((ACPWH*WATT)*NH)/100;TAB(54);
1240 LPRINT USING"####.##";((ACPWH*WATT)*NH)*28)/100;TAB(64);
1250 LPRINT USING"####.##";((ACPWH*WATT)*NH)*365)/100
1260 RETURN
1270 LOCATE 1,1:PRINT STRING$(180,32);:LOCATE 1,1:RETURN

```

**TAXSTAR on a SANYO**

The quickest and LEAST PAINFUL way to prepare income taxes  
Runs on MS-DOS or CP/M with DataStar, FormSort & ReportStar  
Schedules A, B, C, D, E, F, G & W  
Forms 1040, 2210, 3468, 4562  
(Other forms prepared on special request)  
Complete Package: \$75      Sample with 1040 & Sch B: \$10

## TypeRight

Suite C  
4224 University Way N.E.  
Seattle, WA 98105  
Telephone: (206) 547-TYPE

## RUN LOTUS 1-2-3™ ON SANYO 550/555 FOR ONLY \$29.95

SOFTWARE ANSWER #2B is a program that allows LOTUS 1-2-3 version 1A to run with all features on a SANYO 550/555 with 256K memory.

- HIGH RESOLUTION GRAPHICS
- ALL 1-2-3 FEATURES SUPPORTED
- NOT COPY PROTECTED
- ONLY USES 5K MEMORY
- RUNS ON HARD AND FLOPPY DISK
- NO VIDEO BOARD REQUIRED

SOFTWARE ANSWERS, INC. 2888 BLUFF ST. #460  
BOULDER, CO 80301 (303) 441-9290  
™ Lotus Development Corp.

## Software review

## *Envoy — Telecommunications Made Easy*

Telecommunications is one of the things that after you have used for awhile, you don't quite remember what life was like without it. *Envoy*, by Artisoft, is a telecommunications package that is worth your time to investigate.

I have been telecommunicating since 1982 and my phone bill has never been the same, but I feel I have gotten my money's worth from all the public domain software and news I got off bulletin board systems and the big services like CompuServe and The Source. What I like about *Envoy* is its size versus its features. The code for *Envoy* is contained in a single file of only 9,680 bytes. This may not seem to be much of an accomplishment, until you read about all the features that are contained in *Envoy*.

*Envoy* was probably the easiest telecom package to set up that I have used. It is menu driven, therefore it is easy for the first-time user. I found the manual to contain all the necessary information in concise order. The default parameters are whatever your computer is set to. The Sanyo MBC-550/555 series defaults to Port COM1, 1200 Baud, no parity, 1 stop bit and 8 data bits. This configuration will let you logon to most BBSs and the major networks. I have a 1200 Baud modem and the default was 1200, so if you have a 300 Baud you would have to change this, but it is quite easy.

As far as actual operation of the program goes, it flows quite well. When the program starts, you are presented with a "main menu" that has several options, one of which is the Terminal command. To access the terminal mode, you just press the first letter of the option, 'T' in this case.

Other options on the main menu include Envoy, a transfer protocol that uses the ANSI X3.28 standard block transfer. This protocol will transfer data with complete error checking and insure that the data you send is 100 percent free of transmission errors caused by static on the phone lines.

The next menu option is Xmodem. Xmodem is like the Envoy option. It is a transfer protocol that will insure your data to be 100 percent error free when it is transferred. Xmodem is very popular on most BBSs and public telecommunication services.

The next option is Port Parameters, which allows you to change the COM port (on the MBC-550 series it is always Port 1) and other things like Baud rate, parity type, number of stop bits and data bits. This is the option you would use to change to 300 Baud if you have a 300 Baud modem.

The last option, Utilities, is one I did not expect to find in such a small program. The Utilities option allows you to do many of the DOS functions from within the program itself, thus saving you from having to exit the program just to get a directory of the disk. The options under the utilities section include a directory (complete with wildcards), the ability to log to another disk, erase files, type files, copy files, rename files,

print files, change to another directory, create a directory and remove a directory.

As you can see, this includes the most important DOS commands. I especially enjoyed having the change, create and remove directory commands. I have a five megabyte hard disk on my Sanyo and find myself frequently needing to transfer files from different subdirectories. I transferred several files quite easily with the Xmodem protocol, but was unable to find a service that supported the ANSI protocol. I also used the text capture and send functions and found them very easy to use.

One feature I have not used on most other telecom packages was the auto logon strings. This is where you can set a certain key to send a certain string of characters when you press it. I have not used them in the past as many packages made it very difficult to set up the strings in the first place, but with *Envoy* it was quite easy.

Before I end this review, there is one other feature I liked and that is the ability to assign a key to let you escape from the terminal mode back to the menu. When you go to enter the terminal mode, the program will ask you to press the key that will let you exit from the terminal mode. I tried several different keys and it always worked. You can use anything you like. For example: CONTROL-R, the tilde ~ or the TAB key. I liked being able to use the TAB key mainly because it is large and I don't use it when I am logged onto BBSs or CompuServe. In conclusion, I would say that *Envoy* is well worth the price, especially if you are limited to disk space and don't want a 50 to 100K telecommunications package taking up precious space.

(Artisoft, Inc., P.O. Box 41436, Tucson, AZ 85717; 602-327-4305, \$49.95)

— Geff Purcell

## ASSEMBLERS

**Use your personal computer as a development system for machine language microprocessor programs.**

### THESE ARE FAST, THOROUGHLY TESTED CROSS-ASSEMBLERS

Full capability to link modules. Relocation and linkage directives. Link/locator program included. Full support of internal registers and labeled internal bits where applicable.

- Macros, Conditional assembly, Built-in editor.
- Cross-assemblers available for most microprocessors.
- Versions for PC DOS and MS DOS machines.
- Download program transfers object files to EPROM programmer.



NEW! \$100  
EPROM Programmer

**MicroComputer Tools Co.**

1255C KENWAL RD., CONCORD, CA 94521

To order call:

**(415) 825-4200**

MASTERCARD AND VISA ACCEPTED



## OTC Stock Exchange — An Entertaining Simulation

If you enjoy playing the stock market, or like to dream of playing the stock market, this simulation may be for you. *OTC Stock Exchange* will help you understand how stock prices change and which factors affect the price of stocks.

There are two programs included in this package; one for those who use a monochrome monitor and one for those who use a color monitor.

As many as six can play and the simulated period may be from one to 30 years. In order to ensure a different game each time, you are required to enter a random number from one to 9,999. After these preliminaries, a line graph for the year is drawn. This program makes use of the Sanyo's fine graphics capabilities. If, at the end of the year the market is above the center line, you are in a "Bull" (positive) market or "Bear" (negative) market.

The *Wall Street Journal* will appear on the next screen. Three of the nine stocks will be reflected and information about each will be given. The information about these three stocks will include what their gains or losses were, in addition to any that normally occurred during the year.

The next screen will display all nine stocks with information about last year's prices, net change and the current year's prices. A bar graph is then drawn showing each player's dividends for the year.

Now, we are ready for the trading session to begin. Each player will be allowed to buy or sell any of the nine stocks or treasury bills. When the trading session has ended, a screen will graphically summarize each player's total cash worth. This cash worth is calculated by taking their cash on hand plus their portfolio value. Should you choose to play for more than one year, the program will continue with the next year.

This is a very enjoyable program that will entertain you for hours. The documentation is easy to follow and the price is really reasonable.

(SoftSol, P.O. Box 42096, Las Vegas, NV 89116-0096, 702-452-0989, \$17.95 plus \$2 S/H)

— John Chumney

### FULLSCREEN ASCII EDITOR FOR SANYO

An alternative to EDLIN  
Command driven with online help

System required: MBC-55x, 192k  
Program limits: 255 char/line

792 line/file

52k file size

Price: \$15 CA residents add .90 SST

Lotech Software Designs  
PO Box 884  
La Mirada, CA 90637-0884

## Sanyo BASIC User's Handbook — More On BASIC

There have been many justified complaints directed at the section of the MBC manual devoted to Sanyo BASIC. Most of us had to learn by trial and error, word of mouth and articles in SOFT SECTOR. This book contains much of the information Sanyo didn't supply with the BASIC interpreter, but should have. It provides clear explanations to some of the opaque material Sanyo did include in the 550 series manuals.

The opening chapter contains the rock bottom, elementary material. It includes a few words on starting the computer, loading BASIC, and entering, editing, listing and running programs. The structure of BASIC programs is discussed in broad terms. The next seven chapters provide more detailed treatment of important topics, including data types, variables, functions, data input and output, branching statements, arrays, file handling and graphics. The final (and longest) chapter is an alphabetic listing of command, keywords, etc., providing brief explanations of each.

The appendices include the Sanyo character set, reserved words, the comparison of the 555 and the IBM keyboards (also found in the 555 manuals), DOS and BASIC error messages and the 555 memory map. As far as I can determine, the index is adequate. It contains entries for both topics and keywords.

Many functions and procedures not mentioned in the Sanyo manuals are introduced. The alphabetic reference chapter contains at least a dozen such items, including a few that were news to me. In the main section of the work, there are two important "new" topics treated in detail. The first concerns formatted output, such as the PRINT USING and LPRINT USING commands, which allow one to write programs that produce fancy output. The second addition is the chapter on file handling, which discusses both sequential and random access files, and the standard file functions and commands. I might add that in many cases, the material that "Duplicates" the Sanyo manual is an improvement.

The book is written by Weber Systems, Inc. and seems to be aimed at a very wide audience, ranging from absolute beginners to those capable of writing machine language routines.

I would not recommend this book to absolute beginners (at least not by itself). The book explains how to start the computer, and the authors recommend that all disks be copied, but it is not explained how to do this. Also, there is no detailed advice on how to write programs. The sample program listings are too short to illustrate anything beyond the uses of individual commands.

I would recommend that readers have a rudimentary understanding of DOS and have some experience with at least one programming language (not necessarily BASIC). On the other hand, anyone with this background, who is less than thoroughly familiar with Sanyo BASIC, will benefit from this book. With a few hours practice, they will be able to take full advantage of the full screen editor and the commands that make Sanyo BASIC unique.

(Weber Systems, Inc., 8437 Mayfield Road, Chesterland, OH 44026, 216-729-2858, \$17.95)

— Stewart Shapiro

## ProDesign II — An Excellent CAD Program For Your MBC-775

CAD is almost a "magic" acronym these days. The letters stand for Computer Aided Design. The pens and pencils, triangles and T squares of the ancient draftsmen of 10 years ago have been replaced by the CAD system. No longer does the draftsman hunch over his drawing board in a dim, drafty room lighted by candles. He now sits face to face with a computer instead; his face bathed in the eerie glow of a monitor. He doesn't even need a candle.

CAD is the way to go. CAD is the word processor of drafting. Move parts of a drawing around like *WordStar* moves sentences. Rotate the whole drawing, or a part of it, to any angle of your choice. Save symbols, or drawings, in a disk file and call them up when needed. When your drawing looks good on the screen, print it out for "proofreading." Sound simple? It is.

There is a certain untouchable quality about CAD programs. One reason for this is the cost of these programs — usually around \$1,000. The price keeps most of us away pretty effectively. American Small Business Computers has set about to rectify that situation. They have developed a full-fledged, packed with features, CAD system called *ProDesign II* which sells for \$299. That isn't a misprint — I said \$299.

Yes, I know the others sell for a lot more, and I was fully prepared to find a half-way CAD system in *ProDesign II*; something rather like an advanced Etch-A-Sketch. I was surprised. I couldn't find anything the expensive systems could do that *ProDesign II* couldn't. I will grant that the expensive CAD programs can do some things easier and quicker, but *ProDesign II* could do them as well. Let me put it this way; you won't see the difference on your printout.

Let's get down to details. *ProDesign II* will run with the keyboard, a mouse or a digitizer. I regret that I was able to test it using only the keyboard, but it works so smoothly on the keyboard that I didn't feel hampered in any way.

To start using *ProDesign II*, you first run a set-up program. This tells *ProDesign* whether you are using a printer, a plotter or both. You can also designate the use of a digitizer or mouse. There is an extensive selection of options. If you own a printer, plotter, mouse, digitizer, or video display card not in the set-up program, you have found some unusual hardware indeed. After you have made your hardware selections, just type in PD to run. You can make drawings with the keyboard in either the high or medium resolution mode by moving the cursor with the arrow keys on a Sanyo MBC-775 or compatible.

## CoForth 83

MIDI INTERFACE CARD/COMPOSITION SOFTWARE FOR SANYO 550 SERIES  
Enables the Sanyo to communicate with up to 16 channels of MIDI equipped synthesizers (Musical Instrument Digital Interface). Includes full CoForth 83 language customized for MIDI with sequencer applications and text-oriented composition packages. Disk, manual, board, cables and shipping.....\$195.00

EXTENDED CONCURRENT FORTH-83 FOR THE SANYO 550 SERIES  
FORTH-83 Standard programming language, up to 30 times faster than Basic. Ideal for graphics, games, robotics. Built-in extensions to support Sanyo's unique features:

\*IBM-PC/Sanyo Video Board compatible \*Full featured editor  
\*Hi-res graphics \*Multitasking and timing  
\*MS-DOS function support \*Screen print  
Disk, manual and shipping.....\$40.00



2537 Colfax Avenue South  
Minneapolis, Minnesota 55405  
(612)377-7369

 BLUEWATER

In the high resolution mode you get only two colors: foreground and background. That's not a shortcoming in the software: that's just the way things are in the wonderful world of IBM. You can use the normal range of IBM colors in the medium resolution mode. If you are using a multicolor plotter, the plotter will print the selected colors, regardless of what shows on the screen.

There you have it; a full-fledged CAD package for your 775 or the long awaited 800 series, as well as good old IBM and its other clones. One other thing: *ProDesign II* requires 512K of RAM. If you are using a 775 with 256K and you want to run *ProDesign II*, select your memory expansion carefully. You may want to call Sanyo first and get their recommendations. Not all memory expansion cards will work on the 775. American Small Business Computers claim that *ProDesign II* will run on a 555 with the Video RAM Board and 512K. I cannot substantiate that claim since I don't have 512K in my 555.

The documentation is excellent and well packaged. It even includes some tutorials which are very helpful for a first-time user. You can also call up a help screen from within the program which lists all the functions — *all* the functions.

Not bad for an inexpensive CAD package and an inexpensive printer, is it? You might say the software is not so inexpensive, but take a look at others on the market for three or four times the price and you will be convinced.

If you need a CAD package for your Sanyo MBC-775, you have just found it. I recommend *ProDesign II* with great enthusiasm. I have never reviewed any piece of software better thought out or better executed than *ProDesign II*.

(American Small Business Computers, 118 South Mill Street, Pryor, OK 74361, 918-825-4844, \$299)

— Jim Pile



**MICHIGAN SOFTWARE  
DISTRIBUTORS INC.**

43345 GRAND RIVER • NOVI, MICHIGAN 48050

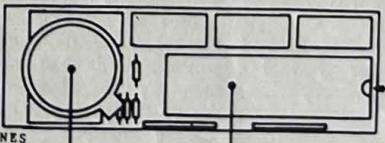
 SANYO "AUTHORIZED DEALER"

ORDERS AND INFO (313) 348-4477 MODEM BBS LINE (313) 348-4479

SPECIAL HARDWARE ENHANCEMENTS

NEC V20 CHIP / 8088 REPLACEMENT, FASTER PROCESSING SPEED...	24.95
FORMAT SOFTWARE PATCHES.....	5.00
MICHTRON SOFTWARE PATCHES.....	20.00
SANYO 550/555	

MICROSYNC'S dClock  
PLUGS INTO 8088 SLOT  
KEEPS TIME AND DATE  
EVEN WHEN COMPUTER IS  
POWERED DOWN....\$9.95



SANYO 550/555 & IBM CLONES

Battery Empty 8088 Location of Notch  
on 8088 Chip  
Socket

Complete Hard Disk and Host Adapter for  
the Sanyo 555 Series Computer.

1 Year Warranty. Price: \$995.95 + ship.

SOFTWARE

MICHTRON / MICHIGAN SOFTWARE / U.S. DIGITAL / MARK DATA

VISA / MASTERCARD / AMEXP / C.O.D. / 3.00 SHIP & HANDLING

### Sanyo ECR-360 — A Perfect Partner For The MBC-555-2

Perfect Partners is not a new software package. It is a complete, computerized, electronic point of sale system which includes an MBC-555-2, a monitor, a printer and a complete operating and inventory package.

You know those fancy cash registers you see in the big chain stores? Now businesses, both large and small, can have one too. With the Perfect Partners system from Sanyo Business Systems, Corp., you can decide who will access what on your cash register. You can keep track of the day's receipts and the personnel who entered them. Even better, you can keep track of your entire inventory, updating it as a sale is being made. It's all on the disk of a Sanyo 555-2 which comprises the computer portion of the system. The cash register portion is a Sanyo ECR-360.

Operation of the ECR-360, while in communication with the Sanyo 555 and the Perfect Partners software, is fairly transparent to the user. There is little difference between using the full system as opposed to using just the cash register. There are three levels of employee security. Level 1 employees can perform any transaction without entering an employee identification number. Level 2 employees cannot access certain

functions without first entering an employee number; for example, the "No Sale" key and the ability to terminate communications is denied them. At Level 3, all employees must enter their identification numbers to do anything. I tested the system at levels 1 and 2 only. I never put any money in the drawer though.

The cash register has programmable function keys. You can set the date and time, automatic tax calculations, and a myriad of other needed functions. Since much is involved when learning to use the system, Sanyo wisely insists that all dealers of the Perfect Partners System receive hands-on training. They do not sell the system without the training. Believe me, you will need it. That isn't to say that it is so difficult to use that all your employees will need degrees in computer science. The employees will find it no more difficult than any other cash register once they have started using it, but they will have to be trained.

Sanyo is offering, to relatively small businesses, capabilities that were only available to the large retailers in the past. Up until now, such a system would cost three to four times as much as the Perfect Partner System which retails for \$4,495.

I am not going to attempt to go into any greater detail on the operation of the system in this review. Let it be sufficient to say that everything the manual says it will do, it will. There were no problems either in setting up or operating the system. What more can one say about a system than that? Any system which performs as advertised is a definite standout.

If you are interested and would like further information, contact Stuart Rosenthal at Sanyo Business Systems, Corp.

(Sanyo Business Systems, Corp., 51 Joseph Street, Moonachie, NJ 07074; 201-440-9300, \$4495)

— Jim Pile

### Great Software For Your Sanyo At Low, Low Prices

**RAM Disk. MOR:** An extremely flexible and versatile RAM disk, unlike any others you may have seen. May be removed by a single command, or reconfigured to a different disk size without having to reboot and recopy files. If the computer quits in the middle of a session, MOR lets you recover the RAM disk and your files may still be there. Also tells DOS to forever reload COMMAND.COM from drive A, so you need not worry about using the RAM as default. Automated installation on all versions of DOS 1.25 and 2.11. Runs on 128K systems, too. Only \$24.95

**Spooler. SPUL:** A multi-function spooling utility that provides 1 to 64K printer buffer. Unlike other spoolers, SPUL lets you pause and resume printing, or cancel everything in the buffer, all from the keyboard. DOS Control-P echoes are buffered. As if that's not enough, we have added a SCREEN DUMP capability that dumps any number of lines on the screen to the buffer. Now, tell us which program can dump the entire screen and return control to you in just one or two seconds! Requires any version of DOS 1.25/2.11 and any RAM size. Only \$24.95

**Bibliography.** An electronic marvel for modern scholars! Definition files and command files all properly set up for your DataStar and MailMerge to produce MLA style bibliography. Can be converted to any other styles. Saves you hours of frustration in creating your own. Ready for data entry. Can sort by any field. Number of bibliographic items limited only by your disk capacity. Many tricks included; serves as a tutorial in itself. Used by the author in his Ph.D. dissertation. Only \$15.95

**Mailing List.** Definition files and command files all properly set up for your DataStar and MailMerge to produce a variety of mailing lists to suit different needs. Number of records limited only by your disk capacity. Can sort by any field. Includes many tricks and tips and a command file to print envelopes. Can print 1 or 3-across labels. Originally developed for a magazine subscription agency to keep track of more than 100,000 subscribers. Why waste time creating your own when you can use our fully tested and debugged program? Only \$12.95

**Proportional Spacing.** A program that automatically installs your WordStar to print in proportional spacing. This means such letters as "i" and "l" will occupy much less space than letters like "m" and "w," and the space in between words will be evenly spread out, resulting in a dramatically improved printout that looks almost typeset. You still get all the WordStar printing features, including right justification, boldface, underscore, superscript, etc. You get best results when you use a PS printwheel, but fine even if you use the ordinary non-PS 10 or 12-pitch printwheels. No crowded characters, even on one-word short lines. Comes with a disk and a manual plus a variety of printing tricks. Requires Juki, Brother, Silver-Reed, or any other letter-quality printers. Developed by the author to print his Ph.D. dissertation. **Extra Bonus for Juki 6100 printer:** Our Proportional Spacing program will also automatically install your WordStar to print French cedilla (ç) and German umlaut (ü), two foreign characters not on your keyboard. Now your Juki can print all the diacritical marks needed for French and German. Information on how to print the other four special characters (€ ¢ § £) is also included in our Manual. Fully tested on Juki 6100. All for only \$19.95

### Juki 6100 Printer Accessories

Genuine Juki 6100 100-character Printwheels.	Only \$22.95 each
Roman PS	ABCDEFGHI ~¢¬§£“ç`abcde^:;<>=?
Standard PS	ABCDEFGHI [Ω]Δ °abcdef ½¼²çµ§£³¥!!
Prestige Elite 12	ABCDEFGHI [\\]^ `abcdef [ ]~ç¬§£
Joan Italic 10/12	ABCDEFGHI [Ω]Δ °abcdef ½¼²çµ§£³¥
Mini Majestic 12/15	ABCDEFGHI uvwxyz ½¼²çµ§£³¥! "#\$%

Check, Visa, MasterCard accepted

All U.S. orders shipped FREE, via First Class Priority Mail, in 24 hours. Foreign customers, please add U.S. \$10.00 per order (any item) for Air Mail. NJ residents only, please add 6% sales tax.

### CHAUCER SOFTWARE

1004 Quail Ridge Drive  
P. O. BOX 732  
Plainsboro, NJ 08536  
Telephone (609) 275-0789

# Protect Your Valuable Magazine Collection With . . . DISTINCTIVE AND DURABLE SOFT SECTOR BINDERS

Do yourself a favor! Protect and showcase a valuable resource — each and every issue of **SOFT SECTOR** — with high-quality, blue vinyl binders with the magazine's name embossed in gold.

Spend more time with your Sanyo and less on frustrating searches for misplaced issues. Organize your **SOFT SECTOR** library!

These handsome royal blue binders cost just \$7.50 (please add \$2.50 for shipping and handling per binder).

**SAVE!** Buy four or more back issues of **SOFT SECTOR** with this order and save \$1 per issue. Use the Back Issue Order Form on Page 59.

Mail to:  
**Soft Sector Binders**  
**The Falsoft Building**  
**P.O. Box 385**  
**Prospect, KY 40059**



**YES.** Please send me \_\_\_\_\_ **SOFT SECTOR** binder(s) at \$7.50 each (plus \$2.50 for shipping and handling per binder). If your order is to be sent via U.S. Mail to a post office box or to another country, please add \$2. Kentucky residents add 5% sales tax.

Name \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ ZIP \_\_\_\_\_

My check in the amount of \_\_\_\_\_ is enclosed. (In order to hold down costs, we do not bill.)

Charge to:  VISA     MasterCard     American Express

Account Number \_\_\_\_\_ Exp. Date \_\_\_\_\_

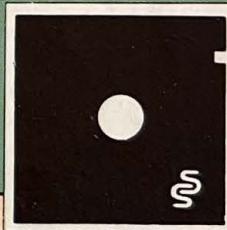
Signature \_\_\_\_\_

## The cheaper, faster companion method to Soft Sector programs!

Each and every month of the year, **SOFT SECTOR** offers an assortment of programs for the home and office — utilities, business applications, games and more — all for the price of typing in the listings. But for the person on the move, that's a high price to pay.

Our method for sure savings:

**SOFT SECTOR  
ON  
DISK**



### BACK ISSUES AVAILABLE

Several of the first issues of **SOFT SECTOR** are now out of stock, but the programs from those issues are available as back orders of **SOFT SECTOR ON DISK**, along with the accompanying text files of the articles ready to be routed to your screen or printer with a simple **TYPE** command. This may be your only chance to get the programs that you've missed.

Volume I contains programs from August, September and October 1984. Volume II contains programs from November and December 1984 and January 1985. All other copies of **SOFT SECTOR ON DISK** include programs from individual issues of **SOFT SECTOR**.

Now is your chance to make your Sanyo a full-time computer instead of a typewriter. Subscribe to **SOFT SECTOR ON DISK** today and give those weary fingers a break! Look for the subscription card between pages 16 and 17.

**SOFT SECTOR ON DISK** subscription rate is: within the U.S., \$99; Canadian rate, U.S. \$115; all other countries, U.S. \$130. **SOFT SECTOR ON DISK** single volume rate is: within the U.S. \$12; Canadian rate, U.S. \$14; all other countries, U.S. \$16. Subscription orders begin with the current issue, allowing 5 to 6 weeks for first delivery. **U.S. currency only, please.**

# Mind Jogger

By Felipe Lebron

**A**re you a compulsive list-maker? When you sit down at your Sanyo in the mornings do you ask yourself what is it you should be doing for the day? Do you simply have a hard time keeping track of due dates and engagements? If so, here's a program just for you. *Mind Jogger* will maintain, display and print your "laundry list" — that ever-changing roster of things to do and their deadlines.

The program will handle up to 10 items which are neatly displayed and arranged chronologically by due dates. If you haven't neglected to enter the date and time, overdue items will be displayed in bright tones (yellow on a color screen), and items due that day will be highlighted in reverse video (black letters on light blue background).

Since *Mind Jogger* is menu driven, it's a snap to add to, delete from or change the displayed items.

---

*Felipe Lebron holds a bachelor's degree in chemistry and a master's in environmental engineering, both from Johns Hopkins University. He is a part-time, free-lance writer and an avid computer enthusiast. The author may be contacted at 2020 Mount Royal Terrace, Baltimore, MD 21217; (301) 523-2768.*

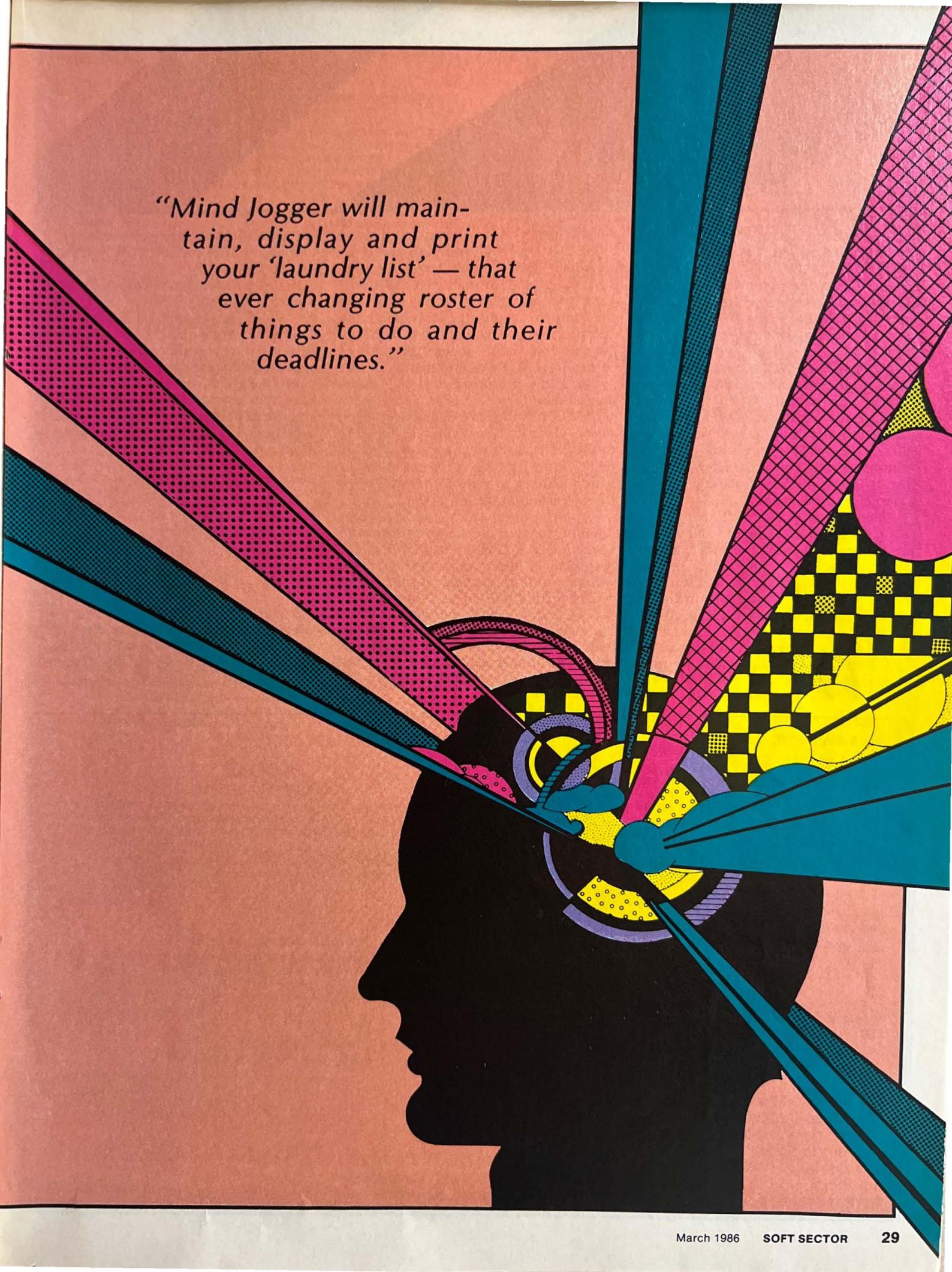
**Adding:** Press 'A' from the program menu and enter the item Text and Due date when prompted.

**Deleting:** Press 'D' from the program menu and enter the item number when prompted.

**Changing:** Press 'C' from the program menu and enter the item number when prompted. *Mind Jogger* will ask, "Change date or text?" Press 'D' or 'T', hit RETURN, then enter the new due date or new text at the prompt.

Once you've modified the display to your satisfaction, press 'U' from the program menu, and *Mind Jogger* will update the permanent copy of your laundry list. Press 'R' instead, and the program will restore the original version of the list — the way it was at your last update. And, of course, you may print the list at any time, as often as you wish. Just press 'P' from the menu. Once you've got the list the way you want it, press 'X' to exit to DOS.

Special care was taken to make *Mind Jogger* foolproof. The program screens all entries before processing them, thus assuring the display remains in its proper position at all times. Unless you hit the BREAK key (CONTROL-C), you cannot exit the program and remain in BASIC. Should you make an improper entry, *Mind*



*"Mind Jogger will main-  
tain, display and print  
your 'laundry list' — that  
ever changing roster of  
things to do and their  
deadlines."*

*Jogger* will give you a "raspberry," a message and endless chances to correct yourself.

All entries, except menu selections, must be followed by hitting RETURN. Pressing RETURN at any prompt, before making an entry, will take you back to the menu and cancel your selection. This might be a useful fact to remember if you change your mind about adding, deleting or changing an item.

By the way, item text may consist of any combination of upper- or lowercase letters, numerals or symbols, including quotation marks and characters obtained through the Sanyo's GRAPH key. Up to 50 characters are allowed.

There's considerable latitude for entering the due date. The month and day may be a one- or two-digit number, and the year may be two or four digits. You may also enter "Ongoing" for items with no definite due date. *Mind Jogger* will refuse entries where the month is greater than 12 or the day is greater than 31. Items with a due date of "Ongoing" will be placed at the bottom. All dates must be in the twentieth century.

Your laundry list is stored on disk as LIST.DTA — a 600-byte, random-access file which the program creates the very first time you run it. LIST.DTA will initially be completely blank, until you add items to the display and update the disk file. If you want a different name for the data file, simply change the value of F\$ at Line 170. Be careful that you don't use the name of a file which already exists on that disk.

LIST.DTA will not be updated until you select 'U' from the menu. Be sure the displayed list is the way you want it before updating the disk file. If it's not, press 'R' from the menu to restore your display to the way it was at the last update.

If your printer is an Okidata 92 or compatible, your list will be printed with special effects similar to those in the displayed list. The greeting will appear in double-width characters, overdue items will be in boldface and items due that day will be underlined. Printer control codes are contained in the variables BOLD\$, (for boldface), UNDER\$, (for underlining), and BIG\$, (for double-width printing), which are defined in Line 150. The control codes

for cancelling these special effects are contained in the variable CANC\$, defined in Line 160.

If these codes don't work with your printer, substitute the proper codes (consult your printer manual or ask your dealer) or delete these lines altogether. Alternatively, you may wish to substitute codes for different special effects.

To take full advantage of *Mind Jogger* as a reminder program, copy it onto a disk you use to boot up your computer. Make sure the disk contains BASIC.EXE as well. Then type the following:

```
COPY CON: AUTOEXEC.BAT
DATE
TIME
BASIC "MIND-JOG"
^Z
RETURN
```

These lines create an AUTOEXEC.BAT file on your disk. From then on, every time you boot your computer with that disk, *Mind Jogger* will be loaded and executed automatically.

#### The listing: MIND-JOG.BAS

```
100 '***** INITIALIZE DATA; SET DATE AND TIME
110 '
120 CLS:LOCATE 1,1,0
130 MO$="Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec "
140 LL$="Here's your Laundry List:"
150 BOLD$=CHR$(27)+CHR$(71):UNDER$=CHR$(27)+CHR$(45)+CHR$(1):BIG$=" "+CHR$(14)
160 CANC$=CHR$(27)+CHR$(72)+CHR$(27)+CHR$(45)+CHR$(0)
170 F$="LIST.DTA"
180 T$=" A.M.":K=1:I=0
190 D$=DATE$:GOSUB 1090
200 TD$="It's "+TI$+T$+" on "+DAT$
210 '
220 ' *** READ IN ITEM LIST -- 10 ITEMS
230 '
240 OPEN "R",#1,F$,60
250 FIELD #1, 50 AS A$, 10 AS X$
260 IF LOF(1)<600 THEN GOSUB 2250:' *** Create datafile, if necessary
270 FOR I=1 TO 10
280 GET #1, I
290 IT$(I)=A$:D$=X$:D$(I)=D$
300 IF D$=" ONGOING" THEN D(I)=990000!:GOTO 340
310 IF D$=STRINGS$(10,32) THEN D(I)=999999!:GOTO 340
320 GOSUB 1140
330 D(I)=D
340 NEXT I
350 '
```

# A-OK Computers

## The A-OK Board™—The Ultimate Upgrade™ “10 MHz + 960K”

The A-OK Board lets you triple (!) your processor speed and nearly quadruple your RAM. The A-OK Board plugs inside your Sanyo with no soldering or trace cutting (either would void your Sanyo motherboard's 1 year warranty). The A-OK Board's 8088-1 does all your processing at 10 MHz, almost three times the speed. Three banks of 256K chips on The A-OK Board combined with 192K on your motherboard gives you 960K of contiguous RAM. The A-OK Board has a socket to accept a highly compatible ROM BIOS. See our TurboDrive550 ad about 800K ramdisks. Options include a real-time clock/calendar. The crystal and 8088-1 are socketed for easy upgrade to faster processors as they become available. The A-OK Board is The Ultimate Upgrade.

A-OK Board with no memory	\$185
8088-1 10 MHz processor chip	\$ 25
Clock/Calendar for The A-OK Board	\$ 69
A-OK Board with "The Works"	\$395

## TP\*Linker “The Linker for Turbo Pascal”

TP\*Linker accelerates the compilation of your Turbo Pascal 2.0 and 3.0 programs. TP\*Linker provides a program that turns your debugged and compiled Turbo Pascal procedures into compact, linkable external procedures. Because they are already compiled, these procedures link instantly into the code you are debugging. TP\*Linker's linkable procedures use much less memory than the Turbo Pascal source code they come from. Thus you can bring them in off disk faster and store more of them on RAM disk. TP\*Linker is easy to use, self-documenting, and works from the Turbo Pascal Program Development Environment. An extra bonus—now you can sell procedures written in Turbo Pascal as linkable procedures without having to disclose your source code. A-OK is looking for high-quality Turbo Pascal libraries to market. Why waste time recompiling code that you know works? TP\*Linker is the ideal upgrade for Turbo Pascal.

TP*Linker for Turbo Pascal 2.0 and 3.0	\$69
TP*Linker for Turbo Pascal 2.0, 3.0, BCD, and 8087	\$99

## SANYGRAF “Professional Business Graphics”

A-OK searched the world to bring you the best business graphics for your Sanyo. We are delighted by what we found—SANYGRAF. SANYGRAF's well thought-out menus and superb documentation, make this extremely versatile software very easy to master. SANYGRAF is very fast and even faster with an 8087. SANYGRAF supports popular plotters. SANYGRAF is so good that Sanyo Australia supplies it with every color graphics system it sells. 2.11, 256K, one DSDD or DSQD drive required.

SANYGRAF	\$99
----------	------

## Janus/Ada “The Ada for Micros”

Now you can use the language of the future on your Sanyo, IBM, Zenith, etc. For just \$99, you get the Janus/Ada Compiler, Linker, Libraries, Example Programs, User Manual, and User Group Membership! Great for learning Ada and for serious programming.

A-OK is pleased to announce its selection as the only distributor of Janus/Ada on the exclusive Federal Government's GSA Schedule. Our contract number is GS00K85AGS6083.

Janus/Ada C-Pak	\$99
-----------------	------

## Janus/Ada Extended Tutorial

This extraordinary package makes learning Janus/Ada easy and fun. Each of the handbook's 10 chapters guides you to an understanding of a different aspect of Janus/Ada. The 150+ page handbook is complemented by examples and quizzes on disk. This is an excellent tool for learning Janus/Ada.

Janus/Ada Extended Tutorial	\$99
-----------------------------	------

## TurboDrive550™ “A Quality Ram Disk for Sanyo”

TurboDrive550 turns your unused RAM into a disk drive. TurboDrive550 is very fast.

- Speeds up all disk intensive software.
- Makes WordStar and FORMSORT run more quickly.

- Accesses disk 75,000 times faster than hard disk.
- Makes 800K ramdisks on the A-OK Board.
- Using the new A-OK DOS-3 with your single or double-sided drives.
- Using the new A-OK DOS-4 with your quad drives.

TurboDrive550 is a low-cost alternative to a second disk drive.

Compare TurboDrive550's features to the competition.

- TurboDrive550 works even if you only have 128K.
- TurboDrive550 protects you from allocating more space than is available.
- A-OK provides a COM file in MS-DOS 1.25 which lets you gracefully free TurboDrive550's space.
- TurboDrive550 lets you use its menu or parameters.

TurboDrive 550 is The Phantom Buster.

TurboDrive550 comes FREE with every new A-OK DOS 1-4™ and is available as a \$7 upgrade to current A-OK DOS owners.

TurboDrive550 for other Sanyo DOSs	\$33
(The best deal is to buy A-OK DOS-1™ for \$35 and get TurboDrive550 free.)	

## Contact! “Mailing Lists and More”

Contact! makes it incredibly easy for you to create and maintain business and personal mailing lists. Contact! prints mailing labels in the order you want and creates files ready for MailMerge. Contact! even prints out your address book complete with phone numbers. Requires 2.11 or Video Board.

Contact!	\$35
----------	------

## N-Code™

### “If You are Serious about Data Security”

N-Code for the Sanyo MBC-550 Series or IBM PC	\$79
---	------

## “AMBIZ-PAK”™

Fifteen programs for Amway Product Distributors	\$100
---	-------

## UPGRADE TO 800K PER DRIVE

Increase your disk capacity to 800K per drive using A-OK's DSQD Kit™ which includes: 2 first quality new TEAC 55F double-sided quad-density (DSQD) drives which replace the TEACs in your Sanyo, A-OK DOS-4, complete easy instructions, and all parts needed.

DSQD Kit	\$355
----------	-------

## DSDD Kit™

Upgrade to 400K per drive—same as DSQD Kit but with 2 TEAC 54B drives and A-OK DOS-2.

DSDD Kit	\$295
----------	-------

## VidSwitch550™

Just push a button on the left front side of your Sanyo and you've switched from the Sanyo graphics port to the Video Board port. Another push of the button on this small box switches it back. The monochrome version requires only the mono cable you already have. The color version requires no extra cables. Everything just plugs in.

VidSwitch550—Monochrome	\$29
-------------------------	------

VidSwitch550—Color (with sync inversion)	\$69
--	------

## XCord550™

### Extension cord for your Sanyo PC Keyboard

6 foot	\$15
--------	------

RS232C Serial Boards	\$72
----------------------	------

## THE A-OK TEAM

Join the team that created the A-OK DOS Family—the choice of OEMs, PrintScreen550, TurboDrive550, The A-OK Board and other top-quality software and hardware. We sell only the best. Fewer titles, better promotion. Give us a call. Join the A-OK Team.

## SEE OUR OTHER FULL-PAGE AD FOR ORDERING INSTRUCTIONS.

DEALER, DISTRIBUTOR, AND OEM INQUIRIES INVITED

A-OK Computers 816 Easley St., Suite 615 • Silver Spring, MD 20910 301-585-5105, 301-585-5106

© Copyright 1984 Apollo Optics & Kinematics, Inc.

```

360 ' *** DISPLAY GREETING
370 '
380 COLOR ,1:CLS
390 LINE (9,3)-(630,156),0,BF:LINE (0,162)-(639,199),0,BF
400 COLOR 2
410 M$=" GOOD ":L$(1)=M$+"MORNING!":L$(2)=M$+"AFTERNOON!":L$(3)=M$+"EVENING!"
420 SYMBOL(144,10)," "+CHR$(14)+L$(K)+" "+CHR$(14),2,1
430 SYMBOL(55,22),TD$,2,1
440 SYMBOL(24,36),LL$,3,1
450 LOCATE 8,9,0
460 COLOR 6,0:PRINT"BRIGHT";:COLOR 2,0:PRINT" items are past due. ";
470 COLOR 0,5:PRINT"HIGHLIGHTED";:COLOR 2,0:PRINT" items are due today."
480 '
490 ' *** DISPLAY LIST
500 '
510 FOR I=1 TO 10:C1=2:C2=0:COLOR C1,C2
520 IF D(I)>D(0) OR D(I)=0 THEN 550 ELSE IF D(I)=D(0) THEN 540
530 C1=6:C2=0:GOSUB 1200:GOTO 560
540 C1=0:C2=5:GOSUB 1200:GOTO 560
550 GOSUB 1200:
560 NEXT I
570 COLOR 2,0
580 GOSUB 1290:GOSUB 1330
590 '
600 ' *** DISPLAY MENU AND BRANCH ACCORDINGLY
610 '
620 COLOR 4:PRINT " DD, HANGE, or ELETE an item; RINT list; ESTORE old list
, or PDATE it; or"
630 PRINT " E IT TO DOS."
640 COLOR 6:LOCATE 22,1:PRINT" A"TAB(7);"C"TAB(18);"D"TAB(34);"P"TAB(46);"R"TAB(
67);"U"
650 LOCATE 23,3:PRINT"X"
660 I$=INPUT$(1)
670 IF I$="X" OR I$="x" THEN CLOSE 1:SYSTEM
680 IF I$="R" OR I$="r" THEN PRINT"RESTORING ORIGINAL LIST";:GOSUB 1290:GOTO 270
690 IF I$="D" OR I$="d" THEN GOSUB 790:GOTO 490
700 IF I$="U" OR I$="u" THEN GOSUB 900:GOTO 580
710 IF I$="A" OR I$="a" THEN GOSUB 1360:GOTO 490
720 IF I$="C" OR I$="c" THEN GOSUB 1800:GOTO 490
730 IF I$="P" OR I$="p" THEN GOSUB 2000:GOTO 580
740 GOSUB 1290:GOSUB 760:GOTO 580
750 '
760 BEEP:PRINT "IMPROPER INPUT. Try again.":COLOR 2:FOR KK=1 TO 1200:NEXT
770 GOSUB 1290:GOSUB 1330:RETURN
780 '
790 ' *** SUBROUTINE TO DELETE ONE ITEM
800 '
810 PRINT "DELETING ONE ITEM FROM DISPLAYED LIST";:COLOR 4:GOSUB 1290
820 PRINT "ITEM #";:COLOR 3:LOCATE CSRLIN,POS+1,1:INPUT "",J$:COLOR 2
830 IF J$="" THEN RETURN ELSE J=VAL(J$)
840 IF J<1 OR J>10 THEN GOSUB 760:GOTO 820
850 FOR I=J TO 9
860 IT$(I)=IT$(I+1):D$(I)=D$(I+1):D(I)=D(I+1):NEXT I
870 IT$(10)=STRING$(50,32):D$(10)=STRING$(10,32):D(10)=0
880 RETURN
890 '
900 ' *** SUBROUTINE TO UPDATE DATA FILE ON DISK
910 '
920 PRINT "UPDATING DATA FILE ON DISK";:COLOR 4:GOSUB 1290
930 FOR I=1 TO 10
940 LSET A$=IT$(I):LSET X$=D$(I)
950 PUT #1,I:NEXT I
960 RETURN
970 '
980 '*** SUBROUTINE TO SORT LIST
990 '
1000 FOR J=1 TO 9:IX=J:D=D(J)

```

# A-OK Computers

The Center of Creation and Dissemination of Sanyo PC Software and Hardware

## The A-OK™ DOS Family

"Upgrade your MS-DOS 1.25 or 2.11 and Video Board"

All members of the A-OK DOS family add these features to your MS-DOS 1.25 or 2.11:

- A-OK DOS supports RAM expansion to 960K.
- With the Video Board, A-OK DOS uses 24K less memory than the "competition". With extended memory, A-OK DOS uses 55K less memory than the "competition".
- A-OK DOS now includes free high-quality ramdisk software—Turbo-Drive550 (a \$33 value).
- Still the only text dump for 2.11 automatically transferred via FORMAT /S.
- Prints a screenful of text to any Sanyo-compatible printer.
- Interactive mode
- It works with one keystroke in DOS, BASIC and all other software packages that run on the Sanyo.
- Does not interfere with program execution or affect the data.
- Batch mode
- Can be activated in BASIC by a one-line command.
- Interrupt-driven and can be called from programming languages.
- Supports the only graphics screen dump software built into DOS—PrintScreen550.
- Includes a special "Sorted Directory" utility.
- Has a utility to strip the high-order bit off WordStar document files.
- User-controlled scrolling in all subsystems, not just DOS.
- A-OK DOS system messages are easier to understand.
- Supports up to 4 disk drives.

A-OK DOS versions for MS-DOS 1.25 correct flaws in MS-DOS 1.25 without sacrificing its strengths.

- All A-OK DOS/1.25 are much faster and use far less memory than any version of MS-DOS 2.11.
- Runs all software that comes with the Sanyo.

A-OK DOS versions for MS-DOS 2.11:

- Run all software which runs on the Sanyo under MS-DOS 2.11 and Video Board.
- PLUS special support for Sidekick™ and Flight Simulator™.
- Support installable drivers for hard disks, etc.

Comparing A-OK DOS-3 and DS DOS+, the Sanyo PC Hackers Newsletter states "In a nutshell, you get more for your money in A-OK's package".

A-OK has tailored different versions of its DOS for varying disk drive configurations. This makes our ad more complex, but our DOS more efficient and easier for you to use.

## A-OK DOS-1™

"Not just another Double-Sided DOS"

- Any combination of up to four single and double-sided drives.
- Double-sided drives support single and double-sided diskettes.
- 8 and 9 sector formats—360K, 320K, 180K, and 160K.

A-OK DOS-1/1.25 or A-OK DOS-1/2.11 and Video Board . . . . . \$35

## A-OK DOS-2™

"Increase the Capacity of your Current Drives"

- All the features and formats of A-OK DOS-1
- PLUS it reads, writes, and formats 10-sector formats
- 400K per double-sided diskette on DSDD drives
- 200K per single-sided diskette on SSDD and DSDD drives
- uses ordinary diskettes
- pays for itself in saved diskettes.

A-OK DOS-2/1.25 or A-OK DOS-2/2.11 and Video Board . . . . . \$45

## 800K PER DISK DRIVE

## A-OK DOS-3™

"A-OK DOS for Double and Quad-Density Drive Systems"

- All the features of A-OK DOS-2
- PLUS up to 4 double-density and quad-density drives
  - on double-density drives:
    - reads and writes all formats read by 1.25 and 2.11
    - reads, writes, and formats 200K SSDD diskettes
    - reads, writes and formats 400K DSDD diskettes
  - on quad-density drives:
    - reads, writes, and formats 730K and 800K on ordinary diskettes.

A-OK DOS-3/1.25 or A-OK DOS-3/2.11 and Video Board . . . . . \$55

## A-OK DOS-4™

"The Standard Quad-Density DOS"

- All the features of A-OK DOS-2
- PLUS up to 4 quad drives—3.2 Megabytes of removable medium!
  - quad drives read all diskettes written by MS-DOS 1.25 and 2.11
  - quad drives read, write and format 160K, 180K, 200K, 320K, 360K, 400K, 730K, 800K formats on ordinary diskettes.
  - will not run Prolok™ disks.

We at A-OK Computers thank you for making A-OK DOS-4™ the standard DOS for quad-density drives on the Sanyo. Thousands of copies of DOS-4™ are now in use in the most demanding applications—yours. Potential bugs have been identified and corrected, making DOS-4 a mature, well seasoned tool. Your constant feedback has resulted in the successive refinement of our documentation. After thorough testing and comparison to would-be competitors, Scottsdale Systems, America's No. 1 seller of Sanyos, selected DOS-4 as the standard DOS supplied with their Silver Fox™. (HAGEN-DOS™ is A-OK DOS-4). And of course, MidWest Micro Peripherals—one of America's largest sellers of computer equipment has selected A-OK DOS-4 for their quad-based Sanyo. Because DOS-4 is now the standard, our 720K and 800K formats are also regarded as the standard. Of the quad-density operating systems, only A-OK DOS-4 supports the very popular PrintScreen550. Soft Sector sums it up well in their September 1984 review entitled "A-OK DOS and PrintScreen550—An Unbeatable Combination".

A-OK DOS-4 is the choice of OEMs. Don't trust your work to an experimental DOS, be sure your operating system is A-OK.

Look for these features in a quad-density drive DOS:

1. Unique support for Lotus 1-2-3™ and Picasso™ on quad drives.
2. Still the only DOS which you can install with quad drives.
3. The system automatically recognizes 8/9/10 sector, 40 and 80 track formats without reconfiguration or using alternate drive symbols (e.g. E:, F:, etc.).
4. Free ramdisk—TurboDrive550™.
5. Uses low-cost ordinary double-density diskettes.
6. FORMATS, READS, WRITES, and DISKCOPYs all MS-DOS standard formats employed by the Sanyo 550 Series.
7. Uses the standard DOS-4 730K and 800K formats.
8. Built-in text screen to printer dump.
9. Supports the only graphics screen dump software built into the DOS—PrintScreen550.

A-OK DOS-4/1.25 or A-OK DOS/2.11 and Video Board . . . . . \$55

## PrintScreen550™

"Fast, High-Resolution Graphics and Text from Screen to Printer with One Keystroke"

- PrintScreen550 now also supports the Video Graphics Board.
- PrintScreen550 is designed for the everyday needs of most users.
- PrintScreen550 capabilities
  - Prints a screenful of graphics to most popular printers.
  - This prints everything on the screen whether it's graphics or text.
  - User has the option to rotate the image on the paper. This permits Okidata 92s and other printers with less than 640 horizontal dot positions to print out the full screen.
  - Turns your Sanyo into a high-resolution graphics machine.
  - Multiscreen facility permits a printed image to be 640 dots by an almost unlimited number of dots in the perpendicular direction.
- PrintScreen550 is flexible and easy to use.
- Interactive mode
  - Works like the "Print Screen" button on the IBM-PC.
  - One keystroke does it all. No need to embed commands in BASIC. No extra programs to execute. Same single keystroke works in DOS, BASIC and all other software packages that run on the Sanyo.
- Batch mode can be activated in BASIC by a one-line command.
- PrintScreen550 is very fast and a lot of fun!

A-OK's PrintScreen550 software pulls the Print Screen button off the IBM-PC and puts it on your Sanyo MBC-550 Series computer.

PrintScreen550 is an option to any A-OK DOS for a meager . . . . . \$24

## Orders may be placed immediately.

Please send money order or cashier's check. Personal or company checks require 2-3 weeks to clear. Prices reflect a 3% cash discount. MasterCard/VISA/CHOICE accepted. MD residents add 5% sales tax. Out-of-state order, no tax. Prices subject to change. All brands are registered trademarks. 20% restocking fee for all returned merchandise. No returns accepted without a Return Authorization Number.

A-OK Computers 816 Easley St., Suite 615 • Silver Spring, MD 20910 301-585-5105, 301-585-5106

© Copyright 1984, 1985 Apollo Optics & Kinematics, Inc.

```

1010 FOR I=J+1 TO 10:IF D(I)=Ø THEN D(I)=999999!
1020 IF D(I)<D THEN IX=I:D=D(I)
1030 NEXT I
1040 SWAP IT$(J),IT$(IX):SWAP D$(J),D$(IX):SWAP D(J),D(IX)
1050 NEXT J
1060 RETURN
1070 END
1080 '
1090 '*** SUBROUTINE TO SET DATE AND TIME
1100 '
1110 MIN$=MID$(TIME$,4,2):HR$=MID$(TIME$,1,2):HR=VAL(HR$)
1120 IF HR>11 THEN T$=" P.M.":K=2:IF HR>12 THEN HR=HR-12:HR$=STR$(HR):IF HR>=6 THEN K=3
1130 TI$=HR$+":":+MIN$
1140 YR$=MID$(D$,7,4):MO=VAL(MID$(D$,1,2)):DA$=MID$(D$,4,2)
1150 YR=VAL(RIGHT$(YR$,2)):DA=VAL(DA$):IF I>Ø THEN 1170
1160 DAT$=MID$(MO$,4*(MO-1)+1,4)+DA$+", "+YR$
1170 D=1ØØØØ*YR+1ØØ*MO+DA:D$(I)=D$:D(I)=D
1180 RETURN
1190 '
1200 '*** SUBROUTINE TO DISPLAY ONE ITEM
1210 '
1220 L=5Ø-LEN(IT$(I))
1230 IT$(I)=IT$(I)+STRING$(L,32)
1240 IF IT$(I)=STRING$(5Ø,32) THEN D$(I)=STRING$(1Ø,32)
1250 LOCATE 9+I,3:PRINT USING "###. ";I;:COLOR C1,C2
1260 PRINT IT$(I);STRING$(6,32);TAB(65);D$(I)
1270 RETURN
1280 '
1290 '*** SUBROUTINE TO CLEAR 22ND AND 23RD ROWS.
1300 FOR L=22 TO 23
1310 LOCATE L,1,Ø:PRINT STRING$(8Ø,32):NEXT L:LOCATE 22,1,Ø:RETURN
1320 '
1330 ' *** SUBROUTINE TO CLEAR 24th ROW.
1340 LOCATE 24,1,Ø:PRINT STRING$(8Ø,32);:LOCATE 22,1,Ø:RETURN
1350 '
1360 '*** SUBROUTINE TO ADD ONE ITEM TO DISPLAYED LIST
1370 '
1380 PRINT "ADDING A NEW ITEM TO DISPLAYED LIST";:COLOR 4:GOSUB 13ØØ
1390 FOR I=1 TO 1Ø:IF IT$(I)<>STRING$(5Ø,32) THEN 1410
1400 GOTO 1420
1410 NEXT I
1420 IF I<11 THEN 1450
1430 PRINT CHR$(7);:"List full! Try another option. Press <RETURN>";
1440 IF INKEY$<>CHR$(13) THEN 1440 ELSE 58Ø
1450 PRINT "ITEM TEXT:";:COLOR 3:LOCATE 22,12,1:LINE INPUT (5Ø);B$:COLOR 2:GOSUB
1290
1460 IF B$="" THEN RETURN
1470 L=5Ø-LEN(B$)
1480 IT$(I)=B$+STRING$(L,32)
1490 '
1500 PRINT "DUE DATE (MO/DA/YR) OR ONGOING:";:COLOR 3:LOCATE 22,33,1:INPUT (1Ø)"
",B$:COLOR 2:IF B$=""THEN IT$(I)=STRING$(5Ø,32):RETURN
1510 GOSUB 1540:GOSUB 98Ø
1520 RETURN
1530 '
1540 ' *** SUBROUTINE TO READ DUE DATE
1550 '
1560 L=LEN(B$)-5:IF L<Ø THEN 1590
1570 FOR J=1 TO L+5:C$(J)=MID$(B$,J,1):C(J)=VAL(C$(J)) :NEXT J
1580 ON L GOTO 1770,16ØØ,1620,1590,1630
1590 GOSUB 760:GOTO 1490
1600 IF C$(1)="O" OR C$(1)="o" THEN D$(I)="    ONGOING":D(I)=99ØØØØ!:GOTO 1760
1610 GOTO 1770
1620 B$=MID$(B$,1,6)+"19"+MID$(B$,7,2):GOTO 1560
1630 FOR J=1 TO 1Ø:C$=" "+C$(J):C=C(J):CØ$=STR$(C)
1640 IF CØ$=C$ THEN 1650 ELSE IF C$="/" AND (J=3 OR J=6) THEN 1740 ELSE 1590

```

```

1650 ON J GOTO 1660,1670,1680,1690,1700,1680,1710,1720,1730,1730
1660 CC=0:IF C>1 THEN 1590 ELSE CC=(C=1):GOTO 1740
1670 IF (CC AND C>2) THEN 1590 ELSE 1740
1680 IF CS<>" /" THEN 1590 ELSE 1740
1690 CC=0:IF C>3 THEN 1590 ELSE CC=(C=3):GOTO 1740
1700 IF (CC AND C>1) THEN 1590 ELSE 1740
1710 IF C<>1 THEN 1590 ELSE 1740
1720 IF C<>9 THEN 1590 ELSE 1740
1730 IF C<1 THEN 1590
1740 NEXT J
1750 D$=B$:GOSUB 1140
1760 RETURN
1770 IF CS(2)="/" THEN B$=""+B$:GOTO 1560
1780 B$=MID$(B$,1,3)+" "+MID$(B$,4,4):GOTO 1560
1790 '
1800 ' *** SUBROUTINE TO CHANGE ONE ITEM
1810 '
1820 PRINT "CHANGING ONE ITEM IN DISPLAYED LIST"::COLOR 4:GOSUB 1290
1830 PRINT "ITEM #"::COLOR 3:LOCATE CSRLIN,POS+1,1:INPUT "",I$
1840 IF I$="" THEN RETURN ELSE I=VAL(I$)
1850 IF I<1 OR I>10 THEN GOSUB 760:GOTO 1830
1860 PRINT TAB(8);D"TAB(16);T"::COLOR 2:LOCATE 23,1,1
1870 PRINT "CHANGE"TAB(9);ATE OR"TAB(17)"EXT? "::INPUT (1)",B$
1880 IF B$="" THEN RETURN
1890 IF B$="D" OR B$="d" THEN GOSUB 1290:GOTO 1920
1900 IF B$="T" OR B$="t" THEN GOSUB 1290:GOTO 1940
1910 GOSUB 760:GOTO 1860
1920 PRINT "NEW DUE DATE (MO/DA/YR) OR ONGOING"::COLOR 3:LOCATE 22,37,1:INPUT (10)",B$:COLOR 2:IF B$="" THEN RETURN
1930 GOSUB 1540:GOSUB 980:RETURN
1940 PRINT "NEW TEXT"::COLOR 3:LOCATE 22,12,1:LINE INPUT (50);B$:COLOR 2
1950 IF B$="" THEN RETURN
1960 L=50-LEN(B$)
1970 IT$(I)=B$+STRING$(L,32)
1980 RETURN
1990 '
2000 ' *** SUBROUTINE TO PRINT LIST
2010 '
2020 GOSUB 1300:L1=22:L2=5:L3=11
2030 LOCATE 22,1:PRINT"MAKE SURE PRINTER IS READY, THEN PRESS <RETURN>."
2040 PRINT"PRESS ANY OTHER KEY TO ABORT THE PRINTING AND RETURN TO MENU."
2050 I$=INPUT$(1):IF I$<>CHR$(13) GOTO 580
2060 GOSUB 1300
2070 LOCATE 24,1:PRINT"PRINTING LIST"
2080 IF BIG$="" THEN L1=43:L2=9:L3=21
2090 LPRINT TAB (L1);BIG$;L$(K):LPRINT
2100 LPRINT TAB (L2);BIG$;TD$:LPRINT
2110 LPRINT TAB (L3);BIG$;LL$:LPRINT
2120 LPRINT TAB (7); BOLD$;"BOLDFACE ";CANC$;"items are overdue. ";UNDER$;
2130 LPRINT "UNDERLINED";CANC$;" items are due today.":LPRINT
2140 FOR I=1 TO 10:LPRINT CANC$:PRE$=BLANK$
2150 IF D(I)>D() OR D(I)=0 THEN 2190 ELSE IF D(I)=D() THEN 2180
2160 PRE$=BOLD$:GOSUB 2230:GOTO 2200
2170 '
2180 PRE$=UNDER$:GOSUB 2230:GOTO 2200
2190 GOSUB 2230
2200 NEXT I
2210 LPRINT CANC$,CHR$(12)
2220 RETURN
2230 LPRINT USING "###. ##;LPRINT PRE$;IT$(I);      ";D$(I):RETURN
2240 '
2250 ' *** SUBROUTINE TO CREATE DATA FILE
2260 '
2270 LSET A$=STRING$(50,32):LSET X$=STRING$(10,32)
2280 FOR I=1 TO 10:PUT #1,I:NEXT I
2290 RETURN

```

The MBC-885 is the latest offering from Sanyo. It is an IBM-compatible desktop which lists for \$1,499 with 256K RAM, two TEAC 55B, 360K floppy disk drives and a Centronics parallel printer port. A color card is standard, but a monochrome card can be purchased. The price does not include a monitor, but the 885, as delivered, will drive any IBM-compatible RGB monitor including a number of Sanyo models.

The 885 is the most cosmetically appealing Sanyo yet. The layout is similar to the Compaq Deskpro with two half-height floppy drives mounted one over the other on the left, leaving room for a hard disk on the right. You'll find the power switch on the right side of the cabinet near the rear just like the IBM. The keyboard is a standard IBM layout, but with a better feel than most compatibles. I like it much better than the Tandy 2000 or the Compaq keyboards.

Another bit of good news is the execution speed of the 885. With its 8088-2 CPU and an 8MHz clock, it runs significantly faster than the IBM PC. You can switch to the IBM standard clock rate of 4.77 MHz via a switch on the back, should you run across some time-dependent software. Nothing I ran on it required the lower speed, so the clock stayed at 8 MHz for the most part. Faster, to me, is always better when it comes to computers.

Since the 885 is a faster computer than the IBM, I decided to run some simple benchmarks to determine just how much faster it really is. The results are shown below. All times are to the nearest second and do not include load times.

### Benchmarks

	Sanyo	IBM
Bench_A	8	14
Bench_B	84	145
Bench_C	8	8
Erosthenes' Sieve	9	15

Since, with the exception of Erosthenes' Sieve, the benchmarks I used were simple ones written solely to evaluate the execution speed of the 885, I will briefly go over them here.

Bench\_A takes the sine and cosine of the angles between zero and 360 degrees in one degree increments. Since the purpose was simply to check the calculation speed, I made no attempt to convert radians to degrees.

*Jim Pile is an instrumentation engineer with Brown & Williamson Tobacco Corp. He has been working with Sanyo computers for two years and writes product reviews for SOFT SECTOR. He may be contacted at 9213 Ponder Lane, Louisville, KY 40272.*

# A Desktop Delight



```

10 CLS:KEY OFF:REM BENCH_A
20 TIME$="00:00:00"
30 PRINT TIME$
40 FOR I=0 TO 359
50 X=SIN(I)
60 Y=COS(I)
70 NEXT
80 PRINT TIME$
90 END

```

In this, and all the benchmarks I wrote, I determined the time by setting TIME\$ to zero at the beginning of the program, then printing it again at the conclusion of the section being timed. This is not the most accurate method of benchmarking, but it does quite well for this type of testing.

Bench\_B is exactly the same as Bench\_A except that it loops through 10 times. I have seen this make a significant difference in relative times, but in this case it didn't.

Bench\_C fills the screen with a single character, then clears the screen and prints the time as before. You will notice that these times are the same for both computers. As far as I can determine this is because, in both cases, the screen prints are being handled through DOS. I also ran Bench\_C on a PC AT. It took six seconds to execute. I did not run any of the other benchmarks on the AT because of the great difference between the PC and the PC AT. The 885 is a PC compatible, not an AT compatible, and a direct com-

parison would not be fair to the 885. After all, the 885 is approximately \$3,000 cheaper than the PC AT.

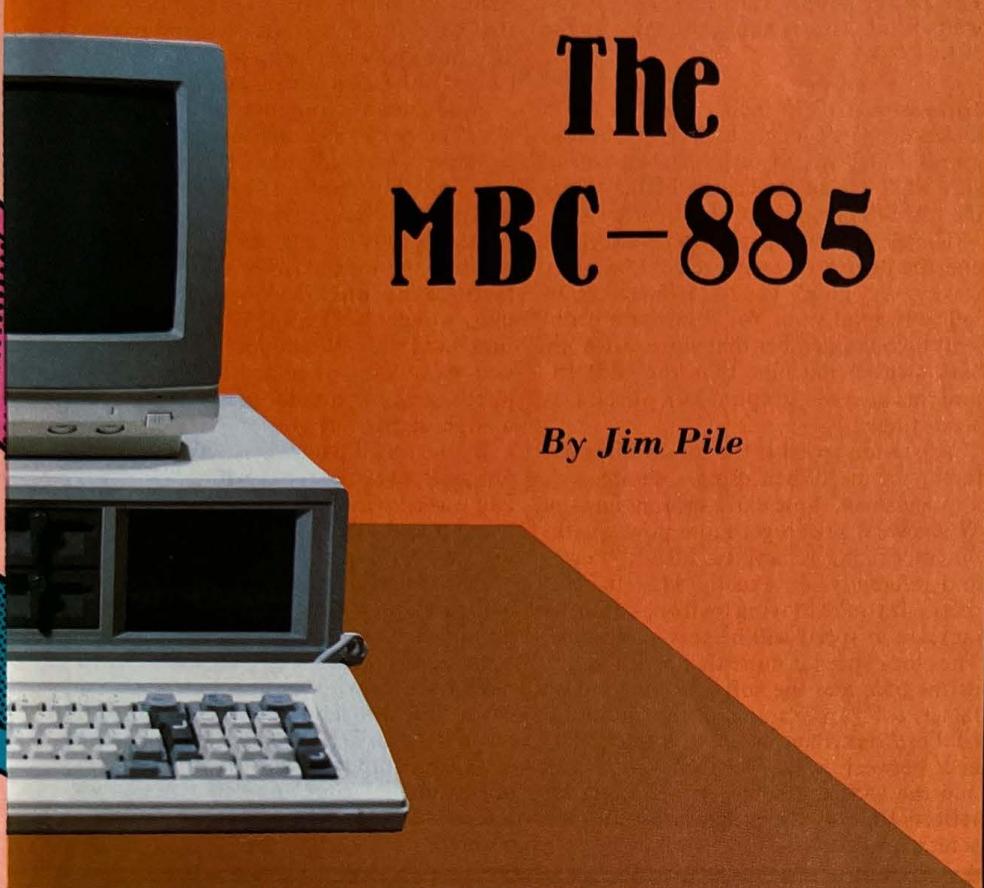
```

10 CLS:KEY OFF:REM BENCH_C
20 TIME$="00:00:00"
30 FOR I=0 TO 1919
40 PRINT"A";
50 NEXT
60 CLS
70 PRINT TIME$
80 END

```

Erosthenes' Sieve is an executable file. I didn't write it, and I have lost the source code for it. That's why there's no listing for it. It is a common benchmark used by almost everyone to demonstrate speed of both software and hardware. The version of the Sieve I used calculates all the prime numbers through 1,899. This was the only benchmark not run in BASIC. I wanted to do most of the testing in BASIC to determine if there was a difference in execution speed of the two interpreters. There is no significant difference.

Let's take a look at what the benchmarks tell us. Bench\_A runs 1.75 times as fast on the Sanyo 885 as on the IBM PC XT. Bench\_B runs 1.73 times as fast on the 885. Bench\_C runs the same on both, and Erosthenes' Sieve runs 1.67 times faster on the Sanyo. The only other benchmark I ran was the SYSINFO file on the Norton Utilities. SYSINFO says the Sanyo 885 has 1.6 times the computing



# The MBC-885

By Jim Pile

power of the IBM PC. It certainly looks like we have things pretty well under control when it comes to determining the execution speed of the 885. We can safely say that it is about 1.6 to 1.75 times as fast as the IBM. (I'm sure Peter Norton will be happy to learn that my benchmarks confirm his.)

Execution speed often depends on the type of software used. If your favorite program only runs 1.2 times as fast, don't blame the computer. As we saw with Bench-C, screen operations constitute a big factor in overall execution speed. Remember, too, that all the benchmarks I ran for this evaluation ignore the load time. A program with overlays can really slow things down. That makes for a very good reason to use a RAM Disk with *WordStar*.

The question most often asked by the prospective buyer of a compatible is "what will it run?" The answer in the case of the 885 is just about everything. I ran everything I could get my hands on and all ran as expected: *Turbo Pascal*, *ZBasic*, *Flight Simulator* and *PC-DOS*, among others. *CopyWrite* was the only program I could not run. Sanyo is aware that *CopyWrite* doesn't run on either the 675 or the 885. *Copy II PC*, a similar program, ran and readily produced a backup of *Flight Simulator*. I do not know if it works on any other disks because I have no other copy-protected software.

The next question is "what do I get for my money?" The answer is power, a very nice keyboard and packaged software (*WordStar* 3.30, *CalcStar*, *MS-DOS* and *GW-BASIC*); all for a very reasonable price. You do not get DOS or BASIC with the IBM, by the way. If you want to boot a newly purchased IBM, you'll have to shell out another \$50 or so.

Concerning the 885 keyboard: It has as good a touch as any I have used. It is firm without feeling springy. It doesn't click like the IBM. The click, or the lack of a click, doesn't matter to me one way or the other. The things I really hate in a keyboard are a "mushy" or springy feel and an inconsistent key tension from one key to another. The 885 exhibits none of those disagreeable flaws. I used the Sanyo CRT-80 while evaluating the 885. It is an excellent RGB monitor. The color saturation and the resolution are both good. I also hooked the CRT-80 to the IBM. As expected, it looked the same as on the 885.

By the way, there is also a composite video output on the 885 which will drive either a color or monochrome composite monitor. If you value your sanity and eyesight, pass that one up. This is not a criticism of the 885. The same thing applies to the IBM and all other compatibles I have seen. The resolution of a composite color monitor is too poor for an 80-column screen, and a monochrome monitor will provide some awful displays

when it receives a color burst. The point is, the 885 provides a good video signal. Be sure to use a good monitor. It doesn't pay to use a discount store close-out.

If you should choose to add memory to the 885 yourself, rather than purchasing it from Sanyo, please remember that the 8MHz clock requires faster memory than the IBM. You must use 120 nanosecond RAM and a board capable of addressing the RAM fast enough. Sanyo has determined that the AST SIX PAC+, the Persyst 384, the Everex EV100 and the IDE 384, among others, will run properly on the 885. Remember though, either buy a board with 120 nanosecond RAM, or buy one without RAM and install the 120 nanosecond chips yourself. If you just order a board without specifying exactly what you need, you will certainly get 150 nanosecond chips.

As for add-on hard disks, almost any suitable drive will work. However, the controller cards supplied with the less expensive IBM compatible drives you see advertised may not. Sanyo confirms that the XEBEC, the SMS, the OMPTI 5510, the DPC and the ADAPT 2010/2070 will run properly. If you have questions concerning other memory expansion boards or other disk controllers, I suggest you call Sanyo before making a purchase.

If you want a hard disk and feel you have no use for two floppy disk drives, the 880 is available. The 880 is exactly the same as the 885, but comes with only one floppy disk drive. Personally, I like having two floppy drives even with a hard disk, but if you prefer only one, the 880 is the way to go.

The Sanyo 885 is a well-built and attractive desktop with a lot of power for the money. The cover is easy to remove to allow the addition of memory expansion, etc. There are seven empty slots available, two of them short. That's no particular problem, since many add-on cards are now being made in the shorter length. Five full-length slots are more than are available on most personal computers anyhow. The Tandy 1000, for example, doesn't have any true full length slots. All the slots are a little too short to accept a standard IBM full length card.

The documentation is adequate, covering both DOS and BASIC in one manual. Actually, Sanyo has worked a good bit of information into the one manual. There are very good sections on EDLIN and DEBUG. The manual also includes the usual bare necessity technical information on DIP switch settings, interrupts and memory maps. The coverage of BASIC presumes you are already reasonably comfortable with the language. That type of coverage is pretty much standard in the industry and if you need detailed information about BASIC, there are plenty of good books available. The same is true of MS-DOS. In fact, if you are not familiar enough with DOS to do everything you

need, why not dig out your back issues of SOFT SECTOR and read, or reread, Danny Humphress' "Mastering MS-DOS" columns. I also highly recommend Peter Norton's book on the subject. Overall, I consider the documentation at least average.

## SPECIFICATIONS

**CPU:** 8088-2 (8MHz), 8087-2 coprocessor optional. (If you add a coprocessor yourself, be sure to get the 8087-2. The standard 8087 is too slow.)

**Memory:** 16K bytes total, 8K ROM BIOS and 8K character generator

**RAM:** 256K bytes standard, expandable to 640K bytes (with expansion card)

**Mass Storage:** TEAC 55B DS drives, SA400 interface, 250K bits per second transfer rate, 93 ms average access time

**Optional Hard Disk:** 5.25-inch Winchester, 10 megabyte formatted, 5M bits per second transfer rate, 85 ms average access time

**Video:** Scan rate 15.70 KHz

**Alphanumeric:** 80 by 25, 8 by 8 dots per character

**Graphics:** 640 by 200 pixels (monochrome), 320 by 200 pixels (four colors, 160 by 100 pixels (16 colors))

**Keyboard:** 84 key IBM-type layout

**Printer Interface:** Standard parallel Centronics

**Power Requirements:** 120 VAC +/- 10%  
The power supply furnishes 125 to 130 watts total. This is about the same as the IBM PC XT.

**Dimensions:** 17.75 inches wide by 13.75 inches deep by 6 inches high (As measured by me using an old fashioned tape measure while trying to decide whether to use the top or bottom part of my bifocals.)

The quality of construction is excellent and the degree of software compatibility is very, very good. The hardware compatibility is good, too. You'll have no problems if you remember that you are dealing with a faster machine than the IBM PC and make your expansion purchases accordingly.

Execution speed is the most important factor for me. When using a database or a spreadsheet, those extra seconds add up. Whenever you can get more power without sacrificing reliability, take it. Power and reliability are exactly what the 885 offers. If you're moving up from a 555, the increase in speed will be very noticeable. The clock speed is more than twice as fast as the 555, and the software tends to be faster, too. An example of that situation is *WordStar*; there is an amazing difference between using *WordStar* on the 555 and the 885, and some of the difference reflects the way the program handles the screen operations.

Sanyo entered the market with the MBC-550, followed quickly by the 555. At that time, the Sanyo was the least expensive MS-DOS machine on the market. It caused quite a stir because no one else had a good quality computer for anywhere near the price. The 885 offers the same promise. There are other fast computers available, but they cost more. There are inexpensive computers available, but the reliability may or may not be good. Since most of the inexpensive ones are manufactured by unknown companies, one must wonder if they will be around at this time next year. When you buy a Sanyo, you get quality, price and the security of purchasing a computer manufactured by a large, stable corporation.

By the way, I paid only \$200 less for my 555 almost two years ago with 128K RAM and was convinced I had found a bargain. I had found a bargain, and Sanyo is still offering bargains.

In conclusion, the 885 is an excellent computer. It is being offered at a very good price, especially considering the bundled software. Not only does Sanyo have a winner with the 885, but with their entire line, which now consists of the 555, the 675, the 775 and the 885. All are excellent computers, and all offer features not available from any other manufacturer. I'd say Sanyo has things pretty well covered.

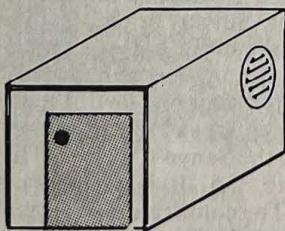
# NEW HARD DRIVE SYSTEMS FOR SANYO 550 EXTERNAL DRIVE SYSTEMS Which Do Not Put A Drain On Internal Power Supply.

**Includes:**  
**Software,**  
**Drive,**  
**Controller,**  
**Interface &**  
**Power Supply.**

### INTRODUCTORY PRICE

5 meg \$545. 10 meg \$745.  
20 meg \$895.

**INTERFACE & SOFTWARE**  
only... \$119.



## DISK DRIVES NOW → EPSON, TEAC and MITSUBISHI

*Low Power Requirements!!!*

Mitsubishi DS, QD.....	\$89.
Epson DS, DD (400K).....	\$99.
TEAC DS, DD (400K).....	\$105.
TEAC DSQD (800K).....	\$105.

**Second Drive \$5. Less**

(EXCEPT MITSUBISHI)

1 Year Warranty on ALL Drives.

### External Drive Kits

\$115. (\$85. with Drive Order)

*Includes all Cables & Instructions.*

*Holds up to 2 Drives. Up to 3.2 MEG!*

**MT BASIC \$49.95**

**MULTI-TASKING & WINDOWING BASIC COMPILER Yields Fast Machine Code for the SANYO. SANYO BASIC REF. MANUAL \$29.**

**NOTE:** Add \$35. for AOK DOS which gives 8,9 or 10 sectors per disk and up to 0.8 meg per drive!!!

800 245-6228

M.C. & VISA Accepted

**OWL-Services**

P.O. Box 116-D

Mertztown, PA.

19539



PA Res Include 6% Tax

PA (215) 682-6855

## One Liner

### BUBBLE BLOWING CONTEST

To enjoy *Bubble Blowing Contest* you do not have to be able to blow bubbles with bubble gum. Just type in contestant one's name when the program prompts for a name. That person will then blow a random-sized bubble. After you have seen blower number one, hit RETURN. Blower two's name must then be typed in. When blower two is finished, press RETURN and the winner of the contest will be announced.

This little game works best with a color monitor.

```
1 COLOR 5,0:CLS:FOR Y=1 TO 2:INPUT"NAME"
;NS(Y):CLS:SYMBOL(90,0),CHR$(Y),52,24,Y*
3:S(Y)=INT(RND*161):FOR X=1 TO S(Y):CIRC
LE(300,115),X:NEXT:INPUT Z:NEXT:CLS:LOCA
TE 22,22,0:IF S(1)>S(2) THEN SYMBOL(0,0)
,NS(1)+" WON",3,4,2 ELSE SYMBOL(0,0),NS(
2)+" WON",3,4,2
```

*Kevin Pike  
Storrs, CT*

### 1-800-437-4757 EXT. 241 Put CAD in your SANYO

Professional CAD is now available with SANYCAD. 256 K recommended. Specify 1.25 or 2.11 DOS.

SANYCAD 2.0  
**\$109.95**

PLOTTER UTILITY  
**\$39.95**

PRINTER UTILITY  
**\$39.95**

Dealer inquiries invited.  
Send \$10.00 (Refundable)  
for demo disk and tutorial.

#### NEW

Send large SASE for ex-
 panded list of IBM soft-
 ware that runs on the
 Sanyo 550 series.

701-280-0915 West Fargo, ND 58078



Box 683

Send for our  
catalog—  
Sanyo  
Applications

In Europe, Canada or Australia order from  
Europe—Zero S.C. Nikkelstraat 39  
2984 AM,  
Ridderkerk, Netherlands  
Canada—CP & A Ltd.  
918 Pape Ave.,  
Toronto, Canada M4K 3V2  
Australia—Jack P. Cockinos  
161 Bunnerong Road  
Kingsford 2032  
N.S.W. Australia



## One Liner

### SPIRALS

This program draws spirals. You are asked to enter a horizontal and vertical magnification. A spiral is created from your input. You might want to try a right/left magnification of 10, and an up/down magnification of 10. Experiment and have fun!

```
1 COLOR 3,0:CLS:INPUT"LEFT/RIGHT MAG. 1-
10";A:INPUT"UP/DOWN MAG. 1-10";B:CLS:WIN
DOW(0,0)-(639,199):VIEW(0,0)-(639,199):F
OR I=2 TO 550 STEP 6:CIRCLE(300+8*((A/3)
)*(SIN(I)),100+4*((B/3))*(COS(I))),I/3,0
,1:NEXT I:FOR I=1 TO 300:NEXT I
```

Rodney Viessman  
Vienna, MO

### Chicago Sanyo Owners

The Computer Grove has everything you will need to upgrade your MBC-550 series PC!

- ✓ memory upgrade\*
- ✓ video expansion bd.\*
- ✓ serial port\*
- ✓ reference manuals
- ✓ software
- ✓ printers
- ✓ modems
- ✓ cables
- ✓ Sanyo Users Group

\*Installed at time of purchase

**The Computer Grove, Inc.**  
5223 Main St., Downers Grove, IL 60515  
**(312) 968-0330**

— Authorized Sanyo Dealer —

# The Dialect Difference Revisited

**By Fred Blechman**  
*Soft Sector Contributing Editor*

**T**hings change. When I wrote the article, "The Dialect Difference" for the premier issue of *SOFT SECTOR* (August '84, Page 12), I covered a lot of information about converting IBM PC BASIC programs to run in Sanyo BASIC. Since then, my book, *Sanyo MBC 550/555 Beginner & Intermediate Guide*, has covered additional information. Since publication of the book earlier this year, more differences between the original "dialects" of Microsoft BASIC have been found. There are also additional dialects!

### Sanyo BASICS

As for the Sanyo 550 series BASIC; in the "early days" there was only Sanyo BASIC Version 1.1 and 1.2, later followed by 1.21, 1.25 and then (for a relatively long time) Version 1.31.

Recently 1.32 (with several bugs) and 1.34 have appeared. I suppose there were some I missed, but most of my work has been done with Sanyo BASIC Version 1.31. This article is based on that version, but all examples should work with Version 1.34. Do not use 1.32 for anything!

How do you know which version of BASIC you have? At the MS-DOS A: prompt, make sure you have a disk in Drive A with **BASIC.EXE** or **BASIC.COM** (or both) on it. If you're not sure, type **DIR**, press **ENTER** and look for **BASIC** in the directory. Once you have a disk with **BASIC** in Drive A, type **BASIC** and press **ENTER**. The **BASIC** sign-on message should give you the version and number of "free bytes" (available user memory).

### IBM PC BASICS

As for the IBM PC BASIC story; that's a real jungle! The IBM PC has a built-in ROM (read-only-memory) chip that contains an abbreviated BASIC called "Cassette BASIC." Since there are probably only about seven PCs left in the entire world that don't have disk drives, it has disappeared into programming heaven. When the IBM PC is turned on and a BASIC disk is installed in Drive A, IBM PC "Disk BASIC" overlays (loads on top of) the existing ROM BASIC, adding additional commands. This is commonly referred to as IBM PC BASIC, which has gone through various versions.

However, if you added graphics hardware (which comes standard with the Sanyo), IBM also offered Advanced BASIC, commonly known as BASICA. This added the graphic com-

mands **CIRCLE**, **DRAW**, **GET**, **PAINT**, **PLAY**, **PUT**, **STRIG** and others — most (but not all) of which are available in good ol' Sanyo BASIC! That was BASICA with PC-DOS Version 1.X. When PC-DOS matured to Version 2.X, BASICA was improved with the addition of **WINDOW** and **VIEW**, and some options were added to the **LINE**, **DRAW** and **PAINT** statements.

### Bring In The Clones

There's more to confuse you. Other companies, such as Columbia, Compaq, Corona and Otron, to name just a few, began producing IBM PC work-alike computers. They couldn't include the IBM PC BASIC ROM without risking legal action from IBM, so they got together with the supplier of most popular BASICS (Microsoft, Inc.) and got GW-BASIC to use with their machines. Somehow, probably to make it seem like GW-BASIC is exactly the same (and as powerful) as IBM PC BASICA, some began using the disk filename **BASICA**. Now the term is almost universal — even though "Clone" BASICA is not the same as IBM PC BASICA! In particular, many graphics commands are omitted from Sanyo BASICA!

Yech! What a mess! And to add even more disorder, the version of BASICA supplied by Sanyo is intended to work only with their optional Video RAM Board and their Video RAM Board MS-DOS.

### What To Do?

Before getting into the details of program translation between Sanyo BASIC and Sanyo BASICA (which is GW-BASIC configured for the Sanyo 550 series), you need to have both programs. You can try Sanyo Business Systems. Last I heard, for \$15 they will send you a disk with the latest versions of BASIC and BASICA, but might not include the MS-DOS version used for BASICA without a video board.

### Incompatible BASICAs

I have tried several different clone BASICA programs on my 256K Sanyo MBC-555-2 without a video board. Compaq BASICA loads, but I can't break a **LIST** or **RUN** with any key or combination. Corona and Otron's BASICAs crash while loading, and are completely unusable. Sanyo's BASICA loads fine, but does not break during a **LIST** or **RUN** with their MS-DOS 2.11. However, I have found a combination of DOS and BASICA that works great! I use DS-DOS Plus 2.11 (MichTron, 576 S. Telegraph, Pontiac, MI 48053; 313-334-5700, \$49.95) along with Sanyo's BASICA. I can break a **LIST** or **RUN** with a combination of **CONTROL** and **BREAK** keys.

Now I can run and modify IBM PC Disk BASIC programs on my Sanyo, using regular IBM PC Disk BASIC commands. I cannot run programs using most IBM PC Advanced BASIC commands. More on that later.

*Fred Blechman, an acknowledged authority on home computers, has written several articles and books related to microcomputers. He is self-taught in electronics and computer BASIC programming and specializes in writing for beginners. Fred may be contacted at 7217 Bernadine Ave., Canoga Park, CA 91307; (818) 346-7024.*

Copyright® 1985 by Fred Blechman.

## Some BASIC Differences

There are some drastic hidden differences between Sanyo BASIC (hereinafter called SBASIC) and Sanyo BASICA. This is because of user memory available. SBASIC reaches up into memory, grabs all it can and makes it available for the program. On my Sanyo 555-2, with 256K, I have 158,968 free bytes with SBASIC 1.31. However, on the same machine, using GW-BASIC Version 2.02 (BASICA), I only have 60,954 free bytes! Why? Because IBM BASIC cannot address over 64K bytes and SBASIC can!

You can also investigate the Sanyo memory allocations for program variables and arrays in SBASIC, but not BASICA. While in SBASIC, with no program in memory (type NEW and press ENTER to be sure), ?FRE or ?FRE(0) will display the number of free bytes available to the user. ?FRE(1) displays the total bytes available for the program and its variables. ?FRE(2) displays variable space only, and ?FRE(3) displays array space only. ?FRE(1)-FRE(2) displays the program area only. Figure 1 shows the results I got.

By writing a simple program, one line at a time, and then checking with the appropriate ?FRE(X), you can see how many memory bytes are used for each line number, keyword, character, variable or array used in a program. This gives you a way to estimate maximum program parameters. Also, checking the space available in each area can be important as you approach their limits with a long program. Anyhow, BASICA does not permit you to determine these separate memory allocations with the FRE command.

A minor, but important, difference is that BASICA uses "Ok" as a screen prompt, while SBASIC uses "Ready." This will tell you which BASIC you're using! Furthermore, BASICA displays 10 function key assignments on the bottom screen line, which you can remove with the KEY OFF command, or restore with KEY ON. In SBASIC, KEY ON disables (that's right — disables) the function keys themselves, while KEY OFF enables the function keys.

## Getting LOADED

Before you can translate a program between SBASIC and BASICA, you must LOAD the target program. We'll assume you

have an IBM Disk BASIC program you want to use on your Sanyo MBC-550/555. You can load it into the Sanyo several ways.

If it has been saved as an ASCII file (with the ,A option) in Disk BASIC or BASICA, it will load into SBASIC with LOAD"filename" in the normal way. You can then SAVE "filename" (without the ,A option) and you have the program on your disk for use with SBASIC. Unfortunately, it probably won't run without crashing in one or more places, but at least you can modify and save it — one crash at a time, with relatively little hassle, strictly using SBASIC.

Next you can type the program into SBASIC from a listing. Yech! Lots of chance for error.

You could also transfer the program from an IBM PC or clone to your Sanyo. This takes two computers, two terminal programs and two modems with a phone at each end (or a cable between computers). Double yech! This is great if you regularly download programs from computer bulletin boards. If you're not familiar with the procedure, avoid this method.

Or finally, you can do yourself a favor and buy MichTron's DS-DOS PLUS 2.11 so you have proper control of BASICA. By holding down the CONTROL key and pressing the BREAK key, you can break a BASICA program. Other DOSs may also allow breaking BASICA programs, but the ones I tried ignored any key combinations and just kept on going, and going and going . . .

## Disk Conversion

With suggestion four you can load any BASICA program, and then save it with the ,A option (SAVE"filename",A) to load into SBASIC. Also, you'll be able to load any SBASIC program saved with the ,A option into BASICA and see if it will run on a PC! (It won't if you use most SBASIC graphics commands, which are not part of the GW-BASIC/BASICA used on the Sanyo!)

Technically, this process of converting disk formats for readability between different machines is a form of "disk conversion," usually only practiced on dark, rainy nights by the big-boy computer wizards. Join the club!

## Crash Your Way To Success!

Once you have a BASICA program in SBASIC, you have to run it to see if and where it crashes. Save after every few program changes so if you crash with a "trap interrupt halt" you'll be able to reset your computer, reload SBASIC, and load the program as it was before the last changes.

### SCREEN, WIDTH, Variable Names, PRINT#

In my previous article on the dialect difference, I covered various keywords that cause problems in translating from BASICA to SBASIC. Some of this needs to be updated, so we'll do that first.

The SCREEN statement is used in IBM BASICA to change screen size (40 or 80 characters on a line) and to specify medium or high-resolution graphics. In Sanyo BASICA, it changes screen size or cursor character. In SBASIC it is completely ignored.

The WIDTH statement in IBM BASICA changes the screen size. Only WIDTH 40 and WIDTH 80 are valid commands. WIDTH 40 gives 40 double-width characters to a line, and WIDTH 80 gives 80 standard-width characters. In Sanyo BASICA, WIDTH 40 allows only 40 standard-width characters on a line, but only on the left half of the screen. There is no effect on the printer.

In SBASIC, WIDTH issues a carriage return to the printer at the specified number and has no effect on the screen. You can specify any number from 30 to 255; for example, WIDTH 50 will cause the printer to have a maximum line length of 50 characters.

Be careful, however, since the WIDTH default is 80. If you put your printer in the condensed (compressed printing) mode,

FRE OR FRE(0) = PROGRAM + VARIABLES + ARRAYS  
FRE(1) = PROGRAM + VARIABLES  
FRE(2) = VARIABLES  
FRE (3) = ARRAYS  
FRE(1) - FRE(2) = PROGRAM

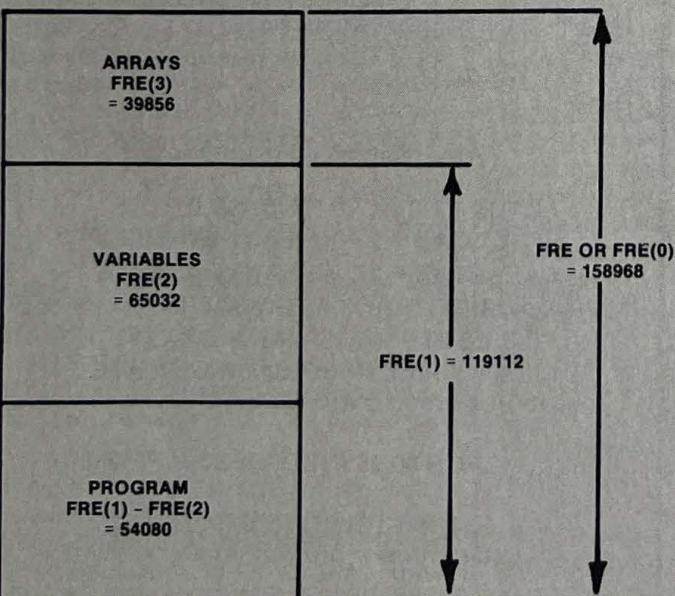


Figure 1  
FREe space, BASIC 1.31 with 256K RAM.

which will normally allow you to get about 130 characters on a line, you will need to specify WIDTH 130 before printing, or SBASIC will automatically issue a carriage return to the printer at the end of each 80 characters! This is very elusive, and can be a real hair-puller when working with compressed printing, or with a wide-carriage printer.

Earlier versions of SBASIC did not allow variables to contain periods, such as PERCENT.TAX, but it seems SBASIC Versions 1.31 and later do allow this.

When saving multiple variables in a disk file, use WRITE# instead of PRINT#. This automatically adds quotes to the file where needed to distinguish between the variables.

### BASICA Illegal Function Calls

The BASICA provided for the Sanyo does not recognize some SBASIC keywords, and will ignore them or come up with an error message.

The following keywords will result in "Illegal function call" with BASICA, but are usable with SBASIC: CIRCLE, GET, LINE, PAINT, PRESET, PSET, PUT, VIEW and WINDOW. This shows how crippled Sanyo's version of BASICA really is!

DRAW, used in IBM BASIC with a special command language called GDL (Graphics Definition Language), is not accepted by either BASIC (Illegal function call) or SBASIC (Syntax error). However, with SBASIC you can accomplish the same thing, though less conveniently, with a sequence of LINE statements.

PLAY is an illegal function call in BASICA, and totally ignored by SBASIC.

SYMBOL, an extremely powerful command in SBASIC, is a syntax error to BASICA.

The COLOR X,Y command (with X for foreground color, Y for background color) is accepted by both BASICA and SBASIC.

However, X can be zero through 31 in BASICA, but only zero through seven in SBASIC; Y can be zero through 15 in BASICA, but only zero through seven in SBASIC.

LOCATE 25,X will crash in BASICA unless preceded by KEY OFF to turn off the bottom line function key legends. LOCATE 25,X is acceptable by SBASIC.

POS reads the cursor column in SBASIC, but POS(0) is required to do the same in BASICA.

For programs with multiple statements on a line, some BASICs allow REM or ' (apostrophe) without a colon after the previous statement on that program line. Both BASICA and SBASIC require the colon.

SOUND is accepted by BASICA, but only produces a short beep. It is ignored by SBASIC, which can beep instead.

STRIG(X) (from zero through seven) and STICK(X) (zero or one) are OK with both BASICA and SBASIC, except SBASIC Version 1.32.

### Other Differences

Hidden within the complex code of BASICA and SBASIC are, no doubt, dozens of other differences and inconsistencies. When you run across "Syntax error" or "Illegal function call" responses to your attempt to use certain keywords, refer to the documentation that came with the program first. You'll also probably need some additional books. My book, of course, is very useful for SBASIC, as is Weber Systems *Sanyo BASIC User's Handbook* 8437 Mayfield Road, Chesterland, OH 44026, (216) 729-2858, \$17.95.

You will also need some IBM BASIC and BASICA books. I recommend *Using Your IBM Personal Computer*, by Lon Poole (Howard W. Sams & Co. #22000), and *Graphics Primer for the IBM PC* by Mitchell Waite and Christopher L. Morgan (Osborne/McGraw-Hill #99-3).

## SANYO FOR LE\$\$

*Convert IBM BASIC to Sanyo BASIC .....	\$29.95
*Unprotect IBM/Sanyo BASIC .....	\$24.95
*Supplement For Basic — 70 Pages .....	\$5.00
*Key Plus Program .....	\$14.95
Tool Box — Includes all the above 4 products .....	\$53.95
Sanyo Tutorial — Beginner to Expert .....	\$37.95
Sanyo Video Board — New Version .....	CALL
The Ultimate - 7 in 1 Integrated Software. Special purchase. Limited Quantities .....	\$59.95
Irish Diskettes DSDD — 10 per box .....	\$14.00/Box
Scotch/3M Diskettes — DSDD .....	\$1.70 each
SSDD .....	.90 each
Run Lotus 1-2-3 Without The Video Board. ....	\$36.95

Dustcovers To Fit Your Sanyo - Many Styles .....	CALL
128K Memory Upgrade .....	CALL
COPYLINK™ — COPYLINK PLUS™ .....	SALE
CP EMULATOR™ — Limited Time Only .....	\$72.95
Sanyo RS232 .....	CALL
All Reference Manuals .....	CALL
Disk Drive Cleaners .....	\$9.95

FREE — All New Expanded Catalog  
Call Now For Big Savings

★ Add \$2.50 for postage and handling. ★

★ COD orders extra ★

★ Dealers inquiries invited ★

★ Check, Visa, Mastercard and Money Order ★

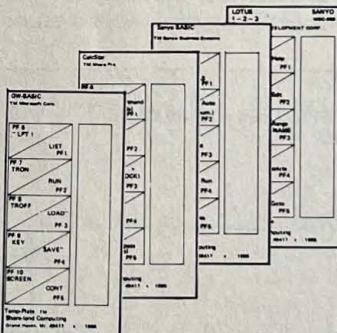
## BLOCK MARKETING, INC.

6009 Wayzata Blvd., suite 102B  
Minneapolis, MN 55416  
(612) 546-3776

(Block Marketing is a recognized Sanyo Dealer.)

\*MN residents must add 6% Sales Tax.

## TEMP · PLATES™



**SANYO**  
550/555  
FUNCTION  
KEY TEMPLATES

Temp·Plates™ Pre-printed for:

LOTUS 1-2-3®	DBASE II®
WORDSTAR®	EASY WRITER I®
CALC STAR®	SANYO® BASIC
PC-WRITE®	GW-BASIC®
PC-FILE III®	MS-DOS® 2.11

PLUS 2 " FILL IN YOUR OWN" PLATES  
VELCRO MOUNTS AND FUNCTION KEY INFO INCLUDED

ALL 12 FOR \$9.95 INCLUDES SHIPPING

## SHORELAND COMPUTING

711 CLINTON ST. GRAND HAVEN, MI. 49417

TERMS: CASH, CHECK, OR STAMPS. NO VISA/MC OR COD.  
MICHIGAN RESIDENTS ADD 4% SALES TAX  
DEALER, DISTRIBUTOR, USER, GROUP INQUIRIES INVITED

# The Basics of a BASIC Terminal Program

By Mordecai Plaut

Almost every serious BASIC programmer has, at one time or another, thought about getting into assembly language programming. Sanyo BASIC, as well as IBM BASIC, includes some very powerful commands through which we can access some of the "raw" system resources. If we learn to use them properly, these commands can give us some of the power of assembly language programming without the complications of assembly language and the expense of an assembler. However, as is usual in life, with increased power comes increased responsibility.

One of these commands is the OUT command. This command works almost exactly like the "out" command of assembler. It allows us to send a byte of data directly to any of the machine output ports. The complementary command is INP which allows us to read the incoming contents of any of these ports. With these two BASIC commands, we can completely take over input and output for *any* of the devices which our Sanyo uses — without leaving BASIC.

The format of the OUT command is:

OUT Address, Integer Variable

The OUT command takes us to the "neighborhood" of Input/Output; that is, it automatically refers to one of the I/O ports. Therefore, when we issue the command, all we have to specify is the address of the port we want. There is no danger

of the data we send winding up in the middle of our BASIC program (or someplace unexpected like that). The "integer variable" should contain the data we want to send to the port in question.

But how can we send alphabetic data if all we can use is an integer variable? To put it most simply, what we usually send is the ASCII number of the character that we want to transmit. If we want to send an uppercase 'A', we set the integer variable to 65; if we want to send a lowercase 'a', we set it to 97. And, if we want to send '1', we have to set the variable to 49! This is what the computer we are "talking" to will interpret as a '1'. If we set the variable to '1', the computer will think we are sending a CONTROL-A.

The format of the INP command is:

Integer Variable = INP (Address)

The INP command is really a function that returns the value in the input port at the specified address when it is used. It is not a verb like the OUT command. The logical analysis of the INP statement is that the real verb here is the '=', which is a variable assignment. But this format shows how the INP function is used. After

this assignment is executed, the value of the integer variable will be set to what was in the I/O address specified in the function. Again, in the simplest case, this would be interpretable as a single number which might be the ASCII number of a character sent to our computer from the outside. However, in some cases we get back something which is best thought of as a mere string of 8 bits. This is what happens when we specify an address of 2Ah as the INP address. We will then get back the current status read word of the 8251. This is documented in the back of the Sanyo manual.

With OUT and INP it is very easy to write a short BASIC program which can really work as a terminal program. We have to set the basic USART parameters with the LINE55 utility if they are different than the default parameters. This utility is supplied by Sanyo on their utilities disk and is called from MS-DOS. It has a menu to set the various parameters. The default parameters are: 1 start bit, 8 data bits, no parity, 1 stop bit and a transmission rate of 1200 Baud. Whether these are correct for your use will depend on who you will communicate with and what parameters they expect.

## Listing 1: BTERM.BAS

```
10 QE=&H2A:QW=&H2B:  
20 REM this part reads data from keyboard and writes to rs232  
30 J$=INKEY$  
40 IF J$="" THEN GOTO 80  
50 AL=ASC(J$)  
60 OUT QW,AL: REM for half duplex PRINT J$,:  
70 REM this reads data from rs232 and prints on screen  
80 AH=INP(QE) OR 253:PRINT AH,"S"  
90 IF AH=253 THEN GOTO 20  
100 PRINT CHR$(INP(QW));  
110 GOTO 80
```

Mordecai Plaut is a consultant on financial applications for computers. He has published a book of essays on logic and philosophy and works on statistical modeling of financial attributes. He may be contacted at Maagalei Harim 5/9, Jerusalem 97707, Israel; (02) 824-514.

When we use asynchronous communication, these questions must be decided in advance. Once these decisions are made, you can call up a friend, one of the bulletin boards or one of the commercial networks, or, through one of the packet-switching networks, you can easily call the other side of the world. All this from a program which is short enough to be a one-liner! Since it is easier to see the logic in the more formatted program, we include a formatted version and a one-liner version. These programs can then be embedded in a larger program which performs functions like SAVEing incoming data to disk, SENDING local disk files to remote and other goodies.

This is basically the same terminal program written as a one-liner. It also works.

```
1 AH=INP(&H2A) OR 253:IF AH=255
THEN PRINT CHR$(INP(&H2B));:GOTO 1
1: ELSE J$=INKEY$:IF J$="" THEN
GOTO 1:ELSE AL=ASC(J$):OUT
&H2B,AL:GOTO 1
```

Any program of this kind written in BASIC might lose characters since the BASIC interpreter is relatively slow. Neither program will work well at high speed. They will simply miss too many incoming characters. I have not tested them extensively at more than 300 Baud.

## A BASIC Terminal Program

Here is a working terminal program I have been using for over a year and a half. It is not nearly as good as the many excellent terminal programs advertised in SOFT SECTOR and elsewhere. There are a lot of features that could not easily be incorporated in a program written in BASIC. More can be included than is here, though, and you may enjoy the challenge of writing routines yourself.

One of the most important ways in which this terminal program differs from the commercial products is that it does not modify itself. There are two important areas which may need modification for your use. The program includes an "Initialization" option which will set these parameters, but it must be invoked every time the program is used. After explaining what the parameters do, I will provide easy instructions for a permanent modification to your copy of the program.

One modification is the initialization of `T$` in Line 10. This variable is the ready signal of the outside system; the character it sends when it is ready and expecting you to send it instructions. It might be the last character of a ready message such as the 'A:' of MS-DOS. That is, for MS-DOS, it would be a colon (ASCII 58). Many larger systems have a special character that is always sent when they expect data

from you. In many IBM systems it is an ASCII 17, which prints on the screen as a small triangle. It is important to supply this character for the incoming data saves (1500 to 1790) and the automatic transmission of previously saved data (3200 to 3500). For the incoming save, it is used as the signal that there is no more coming. For the automatic send, it is used as the signal that it can send out the next line. You should change Line 10 to set `T$` to the ready character of your system. This should not be confused with the full ready message. The full ready message appears only when your system is prepared to accept system commands or subsystem commands. The ready character is sent every time the system is prepared to accept any sort of input. For example, in an "input" mode there will be no ready message since no commands are accepted. However, the ready character will still appear.

The other line that may need modification is Line 250. This sends out a break signal. If you have no need for such a signal then you needn't worry about it. However, if you do need it, the mode instruction may need modification for your system. What happens in Line 250 is that first a command is sent (`OUT QE,63`) which tells the USART to send a continuous low signal. This is held for a short time, and then we have to reset the USART. To do this, we first send a reset command (`OUT QE,64`). This tells the USART to go into reset mode and that a mode instruction will follow. For the default Sanyo settings, the instruction should send a 78 (`OUT QE,78`). To compute the proper value for your system follow this procedure:

Start with	2
Then add:	0 if your character length is 5 bits
or	4 if your character length is 6 bits
or	8 if your character length is 7 bits
or	12 if your character length is 8 bits
Then add:	0 to disable parity checking 16 to enable parity
or	0 for odd parity generation and checking
Then add:	32 for even parity genera- tion and checking
Then add:	64 for 1 stop bit or 128 for 1½ stop bits or 192 for 2 stop bits

The result will be the number that is appropriate for your system. To simplify the changes, this number is also stored in variable `M`.

Both `T$` and `M` are set in Line 10. All you have to do is determine the correct

values for your use, change the assignments in Line 10, save, and you have modified the program to assume the defaults you need.

### Usage Notes

Generally, CONTROL-A is used to terminate the task you are in. From the terminal mode, it will get you to the menu, and from the keyboard save mode, it will end that task and get you to the menu. From the terminal you can also go straight to the incoming save with CONTROL-S. CONTROL-Q will send a break signal. Make sure the mode instruction is properly set for your application or you may have to return to DOS to use LINE55. Except for setting the Baud rate, LINE55 does no more than reset and send a mode instruction to the USART.

The terminal operation is pretty straightforward. It will send from the keyboard and receive whatever comes in the serial port. It is set for full duplex, which means it assumes the system you are talking to will echo the characters you send. If what you type does not show on your screen, it means your outside system is operating at half duplex. To remedy this, replace the last GOTO of Line 30 with: `PRINT J$;: GOTO 30`. This is noted in a comment at the end of the line. This will have the program print your output on the screen instead of relying on the outside system to do it.

At all times, the program assumes you are referring to the 'A' disk unless you specify otherwise. This is true even if you have entered BASIC from another disk. If you want to use a file from another disk, you have to enter the letter of the disk followed by a colon as a prefix to the filename; for example, C:filename.

At a few places in the program, when you are called to supply the name of a file, you can ask for a listing of the files on any disk before giving a filename. You do this by entering the capital letter designating the disk whose files you want to see, followed by a colon. Where this option is available, you will see "(/\*:)" after the request for a filename.

The menu was intentionally kept very simple to shorten the time it takes to print out. You can interrupt the terminal freely with ^A and return with Option 1 from the menu. It should not affect your relationship with the outside system. This is useful if you have to check notes you keep in one of your disk files.

For your information, among the other features this program lacks, which many commercial ones include, are automatic logon, automatic dialing with Hayes-compatible modems, terminal emulation, XON and XOFF flow control, high speed, file transfer protocols and more. The big plus it has is that it is written in BASIC and you can see exactly how it works. You can write routines to customize it exactly for your use and learn a little about data communications.

**Listing 2: STERM.BAS**

```
5' ***** Basic Terminal Program for the Sanyo MBC series *****
6' ***** (c) 1985 by M Plaut
10 QE=&H2A:QW=&H28:T$=CHR$(17):M=250:
20 GOTO 6000
30 AH=INP(&H2A) OR 253:IF AH=255 THEN PRINT CHR$(INP(&H28));:GOTO 30: ELSE J
$=INKEY$:IF J$="" THEN GOTO 30: ELSE AL=ASC(J$): IF AL<26 THEN GOTO 200:
ELSE OUT &H28,AL:GOTO 30: REM for half duplex PRINT J$;: before branch
40 OUT &H28,AL: GOTO 30
200'
210 IF AL=1 THEN GOTO 6000: REM goto menu
240 REM this sends break signal, reset command, mode instruction, command
250 IF AL=17 THEN OUT QE,63:FOR I=1 TO 25:NEXT: OUT QE,64:OUT QE, M :OUT QE,55
:AL=0: GOTO 30
260 REM this transfers to save mode
270 IF AL=19 THEN GOSUB 1490: ERASE AA$: GOTO 30
300 GOTO 40
350'
600 PRINT "TERMINAL:": GOTO 30:
1000'
1010 REM this is to print out files a page at a time
1020 INPUT "FILENAME TO READ(/*:);F$: IF LEN(F$)=2 AND RIGHT$(F$,1)=""" THEN
    IF LEFT$(F$,1)>"Z" THEN PRINT ,, "Use capital for disk id": GOTO 1020:
    ELSE FILES F$:GOTO 1020
1030 ON ERROR GOTO 1330
1040 IF LEFT$(F$,2)<>"A:" THEN IF LEFT$(F$,2)="C:" THEN: ELSE IF LEFT$(F$,2)
="B:" THEN:ELSE IF LEFT$(F$,2)="D:" THEN:ELSE F$="A:"+F$
1050 OPEN "I",#1,F$
1120 I=I+1
1130 IF I<22 GOTO 1150:ELSE PRINT "-> press any key to continue listing": I=0
1140 J$=INKEY$:IF J$="" THEN GOTO 1140:
1150 LINE INPUT #1,N$ 
1160 PRINT N$ 
1200 IF EOF(1) THEN GOTO 1270
1250 GOTO 1120
1270 CLOSE #1
1280 PRINT "->press: 2 for terminal, d to delete, any other key for menu"
1290 J$=INKEY$:IF J$="" THEN GOTO 1290:
1300 IF J$="2" THEN GOTO 600
1310 IF J$="D" OR J$="d" THEN KILL F$ 
1320 GOTO 6000
1330 IF ERR<>53 AND ERR<>64 THEN PRINT "error ";ERR;" in line ";ERL,:GOTO 1350
1340 IF ERR=53 THEN PRINT "file " F$ " not found":ELSE PRINT ,,F$ " is invalid file name"
1350 RESUME 6000
1490'
1495 REM this reads data from outside into core and saves in batches-<ctrl>S
1500 DIM AA$(4000): I=0:
1510 AH=INP(QE) OR 252: IF AH=253 THEN GOTO 1510
1530 N$=CHR$(INP(QW)): PRINT N$;: IF N$=T$ THEN GOTO 1700
1560 I=I+1: AA$(I)=N$:
1600 GOTO 1510
1699'
1700 INPUT "FILENAME TO APPEND DATA :";F$ 
1710 IF LEFT$(F$,2)<>"A:" THEN IF LEFT$(F$,2)="C:" THEN: ELSE IF LEFT$(F$,2)
="B:" THEN:ELSE IF LEFT$(F$,2)="D:" THEN:ELSE F$="A:"+F$ 
1720 FF$=F$:
1730 OPEN "A",#1,FF$ 
1740 FOR J=1 TO I:
1750 PRINT #1, AA$(J);
```

```

1760   ' PRINT AA$(J);
1770   NEXT J
1780   CLOSE #1
1790   RETURN
1999 REM this is to enter keyboard data to save on disk
2000 TA$=CHR$(1):E$=CHR$(13):
2005 DIM AA$(4000): I=0:
2010 PRINT "ENTER DATA(^A to stop):"
2020 JS=INKEY$: IF JS="" THEN GOTO 2020
2030 IF JS=TA$ THEN GOTO 2080
2040 I=I+1
2050 AA$(I)=JS:
2055 PRINT AA$(I);
2057 IF JS=E$ THEN PRINT CHR$(10);: I=I+1: AA$(I)=CHR$(10):
2060 IF I=4000 THEN PRINT " WAIT...": GOTO 2080
2070 GOTO 2020
2080 INPUT "FILENAME TO SAVE DATA(/*)";F$
2090 IF F$="*" THEN GOTO 2120
2100 IF LEFT$(F$,2)<>"A:" THEN IF LEFT$(F$,2)="C:" THEN: ELSE IF LEFT$(F$,2)
="B:" THEN: ELSE IF LEFT$(F$,2)="D:" THEN: ELSE F$="A:"+F$
2110 OPEN "O",#1,F$
2120 FOR J=1 TO I:
2130   PRINT #1, AA$(J);
2140   ' PRINT AA$(J);
2150 NEXT J
2155 IF I=4000 THEN I=0:GOTO 2010
2160 CLOSE #1
2165 ERASE AA$
2170 GOTO 6000
2490 '
2500 REM this is to print out files ON PRINTER
2510 INPUT "FILENAME TO PRINT(/*:");F$: IF LEN(F$)=2 AND RIGHT$(F$,1)="/" THEN
    IF LEFT$(F$,1)>"Z" THEN PRINT ,,,"Use capital for disk id": GOTO 2510:
    ELSE FILES F$:GOTO 2510
2520 ON ERROR GOTO 2650
2530 IF LEFT$(F$,2)<>"A:" THEN IF LEFT$(F$,2)="C:" THEN: ELSE IF LEFT$(F$,2)
="B:" THEN: ELSE IF LEFT$(F$,2)="D:" THEN: ELSE F$="A:"+F$
2540 OPEN "I",#1,F$
2545 LPRINT " ";F$:
2550 I=0
2560 I=I+1
2570 LINE INPUT #1,N$
2580 LPRINT N$
2590 IF EOF(1) THEN GOTO 2610
2600 GOTO 2560
2610 CLOSE #1
2620 PRINT "press any key to continue"
2630 JS=INKEY$: IF JS="" THEN GOTO 2630:
2640 GOTO 6000
2650 IF ERR<>53 THEN PRINT "error ";ERR;" in line ";ERL;: GOTO 2670
2660 PRINT "file not found":
2670 RESUME 6000
3190 '
3199 PRINT "error ";ERR;" in line ";ERL;: RESUME 6000
3200 REM this is to send out files
3210 INPUT "FILENAME TO SEND";F$:
3220 IF LEFT$(F$,2)<>"A:" THEN IF LEFT$(F$,2)="C:" THEN: ELSE IF LEFT$(F$,2)
="B:" THEN: ELSE IF LEFT$(F$,2)="D:" THEN: ELSE F$="A:"+F$
3230 ON ERROR GOTO 3199
3240 OPEN "I",#1,F$
3250 N$=INPUT$(1,#1)
3260 PRINT N$;
3270 AL=ASC(N$)
3275 FOR Q=1 TO 20:NEXT:
3280 OUT QW,AL

```

```

3290 IF AL=13 THEN GOSUB 3400
3300 IF EOF(1) THEN CLOSE #1: GOTO 6000
3310 GOTO 3250
3390 '
3400 N$=INPUT$(1,#1):PRINT N$;: ' these are the lfs
3405 IF EOF(1) THEN CLOSE #1: GOTO 6000
3410 AH=INP(QE) OR 252:IF AH=253 THEN GOTO 3410
3420 J$=CHR$(INP(QW)): PRINT J$;
3430 IF J$=T$ THEN RETURN
3440 GOTO 3410
3500 CLOSE #1
4000 REM this is the installation procedure
4010 CLS
4020 SYMBOL (90,15),"BASIC Terminal Installation",2,2
4030 LOCATE 5,28: PRINT "<RETURN> LEAVES VALUE UNCHANGED";
4050 LOCATE 8,1
4060 PRINT "THE CURRENT INCOMING MESSAGE TERMINATION CHARACTER IS ";
4070 LOCATE 11,13: PRINT "ASCII VALUE: "; ASC(T$); " CHARACTER: "; T$ :
4080 LOCATE 14,1 : PRINT "PLEASE ENTER THE INCOMING MESSAGE TERMINATION CHARACT
ER, ";
4090 LOCATE 15,1 : PRINT "ENTER A 2 DIGIT ASCII NUMBER OR A SINGLE CHARACTER
: ";:LOCATE 15,57:PRINT SPACE$(8);:LOCATE 15,57
4100 TT$="":
4120 J$=INKEY$:IF J$="" THEN GOTO 4120: ELSE IF J$=CHR$(13) THEN GOTO 4150:
ELSE TT$=TT$+J$:PRINT J$;:GOTO 4120:
4150 IF LEN(TT$)=0 THEN GOTO 4270: ELSE IF LEN(TT$)=1 THEN GOTO 4200: ELSE I
F LEN(TT$)>2 THEN GOTO 4160:ELSE TT$=CHR$(VAL(TT$)):GOTO 4200
4160 GOSUB 4400: GOTO 4080
4200 LOCATE 8,5:PRINT "OLD ";:LOCATE 8,52:PRINT "WAS ";
4210 LOCATE 19,1 : PRINT "THE ! NEW ! INCOMING MESSAGE TERMINATION CHARACTER I
S ";

```

**NEW**  
**DISK**  
**DRIVES**  
STARTING AT  
**\$129.00**  
WITH CASE &  
POWER SUPPLY  
**\$199.95**

We carry only the finest quality disk drives...no seconds...no surplus.

**SATISFACTION GUARANTEED!!** ALL DRIVES FULLY TESTED & WARRANTED

**Printers**

**\$239.95**  
Printer Only

**STAR MICRONICS**  
Gemini 10 x 120 cm SG10  
Gemini 15 x 120 cm SG15  
Powerdrive 18 cm (1/2" quid)

**Panasonic.**  
Panasonic 1090  
Panasonic 1091

**MONITORS**

**\$239.95**  
CALL 328

**GORILLA** 79.95

**Amdek**  
\* Model 300  
Color Composite (300 x 260)  
**\$249.95**

**MODEMS**

Modem 1000	SG10	SG15	69.95
SG10	SG15	SG10	72.95
SG15	SG10	SG15	79.95

**DISKETTES** with free library case.....  
Unadvertised Specials.....  
Drives cleaned, aligned & tested.....

Single ps & case \$44.95 Dual 1/2 ht ps & case ..\$54.95

TEAC 55B 55F  
48TPi 96TPi  
Five Inch Single Sided Drives

Speed: 6 ms, 1K to 1K  
Capacity: 360/720K  
Tracks: 40/80  
Warranty: now 1 YEAR

CALL FOR  
SALE  
PRICES

**TRUE DATA PRODUCTS**  
9 South Main St.  
Uxbridge, MA 01569  
(617) 278-6555  
HOURS MON-SAT 9-6 EST

DEALER & DISTRIBUTOR  
INQUIRIES INVITED  
(617) 278-6555

We welcome  
• Visa • Master Charge • American Express  
• Checks (allow 2 weeks for clearing)  
• C.O.D. Add \$2.00

TECHNICAL STAFF ON DUTY PLEASE CALL FOR ASSISTANCE  
**(617) 278-6555**  
**CALL US TODAY!!**  
**1-800-635-0300**  
**ORDER TOLL FREE**

**NEW**  
**RAGS**  
**TO RICHES**  
Chang Labs

**(512) 657-2012**

**Magner Bros.**

**Accounting Software**

- Ledger:** Double-Entry General Ledger for Bookkeeping/Accounting \$125.
- Receivables:** Accounts receivable for Accounting/Collections \$125.
- Payables:** Accounts Payable for Bookkeeping/Cash Flow \$125.

Rags to Riches was developed especially for small businesses with under 20 employees: self-employed business people, home-operated businesses, small manufacturers, service businesses, farms and ranches, professionals, consultants, and retailers, among others. Free Demo available. System Requires DOS 2.11 Dual 360K Drives

**VISA**

**Master Charge**

**14008 Nacogdoches**  
**San Antonio, Texas 78247**

```

4220 LOCATE 22,13: PRINT "ASCII VALUE: "; ASC(TT$); CHARACTER: ";TT$;" "
4270 LOCATE 25,35:PRINT "OK (Y/N)?";:
4280 J$=INKEY$:IF J$="" THEN GOTO 4280:
4290 IF INSTR("ynYN",J$)=0 THEN GOSUB 4400:GOTO 4270:
4300 IF INSTR("yy",J$)>0 THEN T$=TT$: ELSE GOTO 4050
4310 SP$=SPACE$(80):LOCATE 8,1:'PRINT SPACE$(80);:LOCATE 11,1:PRINT SPACE$(80);:
4320 FOR I= 8 TO 24: PRINT SP$;:NEXT: LOCATE 25,1:PRINT SPACE$(79);:
4390 GOTO 4500
4400 LOCATE 25,1:BEEP: PRINT ">> ";J$;" <<";"IS AN INVALID ENTRY!!!!";SPACE$(49)
) ;:FOR I=1 TO 1000:NEXT: LOCATE 25,1:PRINT SPACE$(78);:RETURN
4490 END
4500 GOSUB 4800:
4510 MM=M:HL=50: GOSUB 4900:
4520 NM=2: HL=60
4530 VT=14:PT$="(8/7/6/5)":IN$="8765": GOSUB 4710: IF J$="8" THEN NM=NM+12:
ELSE IF J$="7" THEN NM=NM+8: ELSE IF J$="6" THEN NM=NM+4:
4540 MM=NM:GOSUB 4940:
4550 VT=16:PT$="(E/D)":IN$="EeDd": GOSUB 4710: IF J$="E" OR J$="e" THEN NM=
NM+16:
4560 MM=NM:GOSUB 4930:
4570 VT=18:PT$="(O/E)":IN$="EeOo": GOSUB 4710: IF J$="E" OR J$="e" THEN NM=
NM+32:
4580 MM=NM:GOSUB 4920:
4590 VT=20:PT$="(1.0/1.5/2)":IN$="12": GOSUB 4710: IF J$="2" THEN NM=NM+192
: ELSE IN$=".":GOSUB 4710:IN$="05":GOSUB 4710:IF J$="5" THEN NM=NM+128: ELSE
NM=NM+64:
4600 MM=NM:GOSUB 4910:
4610 LOCATE 25,35:PRINT "OK (Y/N)?";:
4620 J$=INKEY$:IF J$="" THEN GOTO 4620: ELSE IF INSTR("yYnN",J$)=0 THEN GOSUB
4400:GOTO 4610: ELSE IF INSTR("yy",J$)>0 THEN M=NM:CLS: ELSE LOCATE 25,35

```

## Discover What 10 Software Insiders Already Know!

- 1.** "... a little company that has succeeded over the last five years in giving its customers a lot of value for their money ..." — Richard O'Reilly, computer columnist
- 2.** "All the firm's programs are graced with features that the entire industry should be required to provide. Their manuals are the most honest in the industry." — T.R. Reid, syndicated computer columnist
- 3.** "... the two most important attributes of Software Toolworks' programs: they're priced low, and they work well." — The Washington Post
- 4.** "Unlike the software of many publishers these days, none of The Software Toolworks programs are hobbled by copy protection, nor does the company try to tie up its customers with mumbo-jumbo licensing-agreements ..." — The Los Angeles Times "Computer File"
- 5.** "I don't know how The Software Toolworks stays in business charging such low prices for such nifty products ..." — David Gerrold, computer columnist and noted science fiction author

**Reading Professor** — Boost your reading speed while increasing comprehension and retention. Self paces lessons show quick improvement with immediate feedback. Includes 48 practice reading passages and other exercises. Developed by skilled educators, this program tracks your progress and monitors reading rates up to 2,500 wpm. Additional libraries available for Junior High, College Adult, and Professional levels at \$15.95 each. For IBM PC, most CP/M-80 computers. — \$59.95.

TO ORDER CALL: 1-800-223-8665; in CA 1-800-228-8665

*The Software Toolworks*



14478 Glorieta Drive, Sherman Oaks, CA 91423

U.S. and Canada add \$2.00 per order s/h. Overseas orders add \$5.00 per order. CA residents add 6.5% sales tax. Orders shipped UPS. Dealer inquiries invited.

- 6.** The Software Toolworks C/80 compiler is "... the best software buy in America ..." — Microsystems
- 7.** "It would be the best of all possible worlds if some magic diskette could be made that would transform any hardware in such a way as to receive The Software Toolworks' numinous software." — Wm. F. Buckley, Jr.
- 8.** "The Software Toolworks has a whole raft of programs that work, and (the company) sells them for reasonable prices. I strongly recommend that you get their catalog." — Dr. Jerry Pournelle, computer columnist "Byte" and noted science fiction author
- 9.** "One of the original pioneers in low cost, high quality software, The Software Toolworks publishes over 50 solid products in MS-DOS and CP/M for under \$60." — Walt Bilofsky, chairman of The Software Toolworks
- 10.** "All products are shipped within 24 hours, come with a money back guarantee, and free technical support is available (though you'll hardly need it)." — Joseph Abrams, president of The Software Toolworks

**Mychess** — Award-winning world class chess program, featuring nine skill levels and over 850 opening moves. Prints moves and saves games in progress. Outstanding graphics display board on IBM PC and most popular CP/M computers. — \$34.95

**Eliza** — The pioneering artificial intelligence program, Eliza is a "psychiatrist" that carries on a conversation in plain English. Use authentic script, expand it or develop your own. CP/M and MS-DOS. — \$24.95

**The Original Adventure** — Explore the dangerous Colossal Cave for treasures. Endure mystical spells, overcome adversaries. The only official version, uncut, and endorsed by its creators, Crowther and Woods. CP/M and MS-DOS — \$19.95

**Computer Chef** — Original computerized cookbook and recipe file. Data base of over 70 recipes with space to add your own. Scale ingredient quantities, search recipes by keyword, then display or print your selection. Additional recipes available. CP/M and MS-DOS. — \$29.95

```

:PRINT SPACES$(10)::GOTO 4500
4630 REM this sends reset command, mode instruction, command
4640 OUT QE,64:OUT QE, M :OUT QE,55:
4650 GOTO 6000
4690 GOTO 4690
4700 REM input routine for mode setting
4710 COLOR 4,3:LOCATE VT,28:PRINT "<<ENTER ";PT$,:COLOR 2,0:LOCATE VT,60
4720 JS=INKEY$:IF JS="" THEN GOTO 4720: ELSE IF INSTR(IN$,JS)=0 THEN GOSUB 44
00:GOTO 4710: ELSE LOCATE VT,28:PRINT ".....";:RETURN
4800 REM template for mode settings
4810 LOCATE 8,34: PRINT "MODE SETTING:";
4820 LOCATE 9,34 : PRINT "-----";
4830 LOCATE 12,47: PRINT "CURRENT";: LOCATE 12,60: PRINT "NEW";:
4840 LOCATE 20,11: PRINT "STOP BITS.....";
4850 LOCATE 18,11: PRINT "KIND OF PARITY ....";
4860 LOCATE 16,11: PRINT "PARITY SWITCH ....";
4870 LOCATE 14,11: PRINT "CHARACTER LENGTH..."; FOR I=20 TO 14 STEP -2:LOCATE I,30:PRINT ".....";: NEXT
4880
4890 RETURN:
4900 REM routine to print mode values
4910 LOCATE 20,HL: IF MM>=192 THEN PRINT "2 ";:MM=MM-192:ELSE IF MM>=128 THE
N PRINT "1.5";:MM=MM-128: ELSE IF MM>=64 THEN PRINT "1.0";:MM=MM-64:
4920 LOCATE 18,HL: IF MM>=32 THEN PRINT "even";:MM=MM-32:ELSE PRINT "odd ";
4930 LOCATE 16,HL: IF MM>=16 THEN PRINT "enable ";:MM=MM-16: ELSE PRINT "di
sable";:
4940 LOCATE 14,HL: IF MM>=12 THEN PRINT "8";:MM=MM-12: ELSE IF MM>=8 THEN P
RINT "7";:MM=MM-8: ELSE IF MM>=4 THEN PRINT "6";:MM=MM-4: ELSE PRINT "5";:
4950 RETURN
5000 PRINT "10      - initialization"
5020 PRINT "30      - terminal core"
5030 PRINT "2000-3000 - special terminal control"
5070 PRINT "600      - ENTRY for terminal restart"
5100 PRINT "1090-1399 - PRINT routine for local disk files, a screen at a time"
5110 PRINT "1490-1999 - SAVE incoming(RS232) data on disk - <ctrl>S & menu"
5120 PRINT "2000-2160 - SAVE keyboard data on local disk"
5130 PRINT "2500-2999 - PRINT local files on PRINTER"
5140 PRINT "3200-3500 - SEND local disk files to tso"
5180 PRINT "5000-5500 - documentation"
5200 PRINT "6000-6500 - menu "
5250 PRINT ">>>>>>>>> hit any key to continue"
5260 JS=INKEY$:IF JS="" THEN GOTO 5260
6000 PRINT ""
6030 PRINT "1      - simple terminal"
6040 PRINT "2      - DISPLAY LOCAL disk files"
6050 PRINT "3      - SAVE incoming data onto local disk (^S FROM TERM ALSO)"
6060 PRINT "4      - SAVE KEYBOARD data onto local disk (^A to terminate) "
6070 PRINT "5      - SEND local disk files to REMOTE"
6090 PRINT "6      - DOCUMENTATION"
6130 PRINT "7      - PRINT LOCAL files on PRINTER"
6140 PRINT "8      - INSTALLATION"
6150 PRINT "S      - SYSTEM"
6160 PRINT "Anything else - BASIC"
6170 PRINT ""
6200 JS=INKEY$:IF JS="" THEN GOTO 6200
6230 IF JS="1" THEN GOTO 600
6240 IF JS="2" THEN GOTO 1000
6250 IF JS="3" THEN GOSUB 1490: ERASE AA$
6260 IF JS="4" THEN GOTO 2000:
6270 IF JS="5" THEN GOTO 3200
6290 IF JS="6" THEN GOTO 5000
6300 IF JS="7" THEN GOTO 2510
6310 IF JS="8" THEN CLS:GOTO 4000
6350 IF JS="s" OR JS="S" THEN SYSTEM
6360 IF JS="c" OR JS="C" THEN CLS:GOTO 6000
6400 END

```

### **Listing 1: CHANGIT.BAS**

```

9 ****CHANGIT.BAS program by Ray C. Robinson
10 DATA 40,41,42,43,52,53,3B,3C,3D,3E,3F,48,50,4B,4D,41
10 DATA 3D,3E,3F,40,52,53,3B,3C,48,50,4B,4D,47,49,4F,51
10 DATA 47,48,50,4B,4D,52,53,3B,3C,3D,3E,3F,40,41,42,43
10 DATA 44,E8,2D,00,BE,00,00,BF,4C,02,B9,0F,00,E8,2C,00
10 DATA CB,E8,1D,00,BE,0F,00,BF,4A,02,B9,11,00,E8,1C,00
10 DATA CB,E8,0D,00,BE,20,00,BF,4A,02,B9,11,00,E8,0C,00
10 DATA CB,8B,F4,36,8B,44,04,8E,C0,0E,1F,C3,8A,04,26,88
10 DATA 05,47,47,46,E2,F6,C3
100 CLEAR 8
110 DEFINT I
120 FOR I=0 TO &H76:READ CF$:POKE I,VAL("&H"+CF$):NEXT
130 DEF USR1(U1)=49:DEF USR2(U2)=65:DEF USR3(U3)=81

```

### **Listing 2: DEMO1.BAS**

```

199 ****DEMO1.BAS program
200 CLS
208 ****CALL USR1 ML ROUTINE TO RE-DEFINE THE UP-DOWN-LEFT-RIGHT
209 ****CURSOR ARROW KEYS TO PF KEYS 6 THRU 9
210 U1=USR1(U1)
219 ****DEFINE SUBROUTINE ADDRESSES
220 ON KEY GOSUB 0,0,0,0,0,290,300,310,320
229 ****TURN ON THE PF6-9 KEYS FOR ON KEY GOSUB
230 FOR K=6 TO 9:KEY(K) ON:NEXT
239 ****PRINT INPUT MESSAGE AND START FOR NEXT LOOP
240 PRINT "PRESS A CURSOR ARROW KEY:PRINT"
250 FOR J=1 TO 10000:NEXT
259 ****DISABLE FUNCTION KEYS FOR ON KEY GOSUB
260 KEY OFF
269 ****RESTORE CURSOR ARROW KEYS TO NORMAL
270 U3=USR3(U3)
280 END
289 ****ON KEY GOSUB SUBROUTINES
290 PRINT "UP PRESSED":RETURN
300 PRINT "DOWN PRESSED":RETURN
310 PRINT "LEFT PRESSED":RETURN
320 PRINT "RIGHT PRESSED":RETURN

```

### **Listing 3: DEMO2.BAS**

```

199 ****DEMO2.BAS program.
200 CLS
207 ****CALL USR2 ML ROUTINE TO RE-DEFINE THE
208 ****UP-DOWN-LEFT-RIGHT-7/HOME-9/PG UP-2/BLANK-3/PG DN
209 ****KEYPAD KEYS TO PF KEYS 3 THRU 10
210 U2=USR2(U2)
219 ****DEFINE SUBROUTINE ADDRESSES
220 ON KEY GOSUB 0,0,290,300,310,320,330,340,350,360
229 ****TURN ON THE PF3-10 KEYS FOR ON KEY GOSUB
230 FOR K=3 TO 10:KEY(K) ON:NEXT
239 ****PRINT INPUT MESSAGE AND START FOR NEXT LOOP
240 PRINT "PRESS 2-9 ON THE KEY PAD":PRINT
250 FOR J=1 TO 10000:NEXT
259 ****DISABLE FUNCTION KEYS FOR ON KEY GOSUB
260 KEY OFF
269 ****RESTORE KEYPAD KEYS TO NORMAL
270 U3=USR3(U3)
280 END
289 ****ON KEY GOSUB SUBROUTINES
290 PRINT "UP PRESSED":RETURN
300 PRINT "DOWN PRESSED":RETURN
310 PRINT "LEFT PRESSED":RETURN
320 PRINT "RIGHT PRESSED":RETURN
330 PRINT "7 PRESSED":RETURN
340 PRINT "9 PRESSED":RETURN
350 PRINT "2 PRESSED":RETURN
360 PRINT "3 PRESSED":RETURN

```

**By Ray Robinson**

same thing but uses the USR2(U2) statement to add the diagonal control keys 7/home, 9/PG UP, 2/blank and 3/PG DN. Some of you might be asking why the 2/blank key was used instead of the 1/lf key. The 1/lf key is not a function key and can't be redefined. Surprisingly the 2/blank key is a function key and should be labeled "2/cr." It produces the same code as the "End" key on an IBM-PC.

To use CHANGIT.BAS, it must always occupy the first lines of your program. Load it first and then add your own program lines after Line 130. Use DEMO1.BAS and DEMO2.BAS as a guide in using the USR statements in your program. If your program stops running due to an error and before the U3=USR3(U3) statement has been invoked, you will find that the cursor control keys are inoperative; to restore them, simply type U3=USR3(U3) and press RETURN from the BASIC ready prompt. Cursor control will be restored.

# CHANGIT



*This multifunctional program adds ON KEY GOSUB control of the cursor arrow keys*

The ability of GW-BASIC to use the ON KEY GOSUB command with the cursor arrow keys is a powerful tool in developing basic action games and other programs that require direction control of moving graphics.

With this command available, moving graphics can be created with tight BASIC FOR/NEXT loops, and direction of movement can be changed by interrupt trapping the press of a cursor arrow key. Unfortunately, Sanyo BASIC does not allow this since the ON KEY GOSUB com-

mand is limited to the PF1 through PF10 function keys. Direction control can only be accomplished by continuously scanning the keyboard for a key press with the INKEY\$ command and then testing to see which key was pressed with IF/THEN statements. This method slows down moving graphics generated by FOR/NEXT loops and gives imprecise directional control, since depressing an arrow key at a time when the keyboard is not being scanned will cause no action. With this in mind, *Changit* was born.

CHANGIT.BAS actually loads a machine language program which, when called by the programmer, will redefine the cursor arrow keys as PF function keys. There are three choices available: USR1(U1) which will redefine the up-down-left-right arrow keys as function keys PF6 through PF9 respectively; USR2(U2) which will redefine the numeric keypad keys as function keys PF3 through PF10, respectively,

to allow diagonal control; USR3(U3) will restore the keys to normal.

Start by typing in the program Listing 1 taking special care with the data statements on lines 10 through 80. When you are sure the program is error free, save it under the name CHANGIT.BAS. Next type in listings 2 and 3 and save them under the names DEMO1.BAS and DEMO2.BAS respectively. Listing 4 is the assembler source code used to generate the object code used by CHANGIT.BAS.

To see CHANGIT.BAS in action, first load it into BASIC and then type MERGE "DEMO1" and run the program. This demo uses the USR2(U2) statement to redefine the arrow keys. It then sets up a tight FOR/NEXT loop and each time an arrow key is pressed, the program will interrupt out of the FOR/NEXT loop, execute a subroutine which prints which key was pressed and then returns to the FOR/NEXT loop. DEMO2 does basically the

*Ray Robinson is an electronics technician with the FAA, holds a bachelor's degree in business administration, and has been interested in home and personal computers since 1980. He may be contacted at Rt. 8, Box 725, Lake Charles, LA 70605; (318) 474-5301.*

**Listing 4: Assembly Language Source Code**

```
;CHANGIT.ASM
;
PAGE ,96
CODE SEGMENT
CHANGIT PROC FAR
ASSUME CS:CODE, DS:CODE
;
DATA1 DB 40H,41H,42H,43H,52H,53H,3BH,3CH ;data to change arrow keys
      DB 3DH,3EH,3FH,48H,50H,4BH,4DH ;to PF6-9 keys
;
DATA2 DB 41H,3DH,3EH,3FH,40H,52H,53H,3BH,3CH ;data to change keypad keys
      DB 48H,50H,4BH,4DH,47H,49H,4FH,51H ;2-9 to PF3-10 KEYS
;
DATA3 DB 47H,48H,50H,4BH,4DH,52H,53H,3BH,3CH ;data to return keypad keys
      DB 3DH,3EH,3FH,40H,41H,42H,43H,44H ;to normal
;
USR1: CALL GET_ES ;call subroutine to set segment reg's
      MOV SI,OFFSET DATA1 ;point si at data1
      MOV DI,024CH ;point di at basics function table
      MOV CX,15 ;15 bytes to move
      CALL MOV_IT ;call subroutine to move data
      RET ;return to basic
;
USR2: CALL GET_ES ;call subroutine to set segment reg's
      MOV SI,OFFSET DATA2 ;point si at data2
      MOV DI,024AH ;point di at basics funtion table
      MOV CX,17 ;17 bytes to move
      CALL MOV_IT ;call subroutine to move data
      RET ;return to basic
```

# FastStar

*FastStar makes WordStar go fast  
on Sanyo MBC-55X computers.*

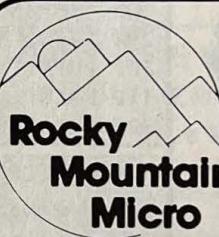
Are you disappointed with how slow WordStar is on your Sanyo? FastStar triples the speed of WordStar's screen output on Sanyo MBC-550/555 computers (mono-chrome mode). FastStar now works in color too, and still speeds up WordStar's screen output by a factor of 2½. No kidding! FastStar should not be confused with patches that only speed up scrolling (such as WizStar), since FastStar speeds up all of WordStar's screen output. FastStar does this by substituting highly optimized screen output routines for the slow operating system routines that WordStar normally uses.

FastStar works with all DOS's and with WizStar. FastStar automatically recognizes if you are using the IBM compatible video board, and adjusts to speed up WordStar even more dramatically. FastStar is easy to install and use. FastStar also provides help to conveniently use a ramdisk to even further increase WordStar's performance. Ramdisk software for MS-DOS 2.11 is included, or you can use another ramdisk with either MS-DOS 1.25 or 2.11.

If you use WordStar on the Sanyo MBC-550/555, then FastStar can make a big difference for you.

FastStar costs only \$20.00, including postage. To order send check or money order to:

PT Software  
149-C Overmount Ave  
West Paterson, NJ 07424



SANYO



P.O. Box 1693, Sandy, Utah 84091 (801) 572-6272

Memory Expansion for your Sanyo MBC 550 or 555

- 960K Memory card with Real Time Clock
- 640K Memory Card with Real Time Clock for use with the Video Ram Board
- All memory products come with Ram Disk and Print Spooler by Tim Purves and Level IV Products
- RS232 Boards
- Clock Calender Card (Correct time and date even after boot up).
- AB Switches

CHECK OUR COMPETITIVE PRICES

Dealer Inquires Welcome  
Six month warranty on Rocky Mountain Products

```

;
USR3: CALL GET_ES           ;call subroutine to set segment reg's
      MOV SI,OFFSET DATA3   ;point si at data3
      MOV DI,024AH          ;point di at basics function table
      MOV CX,17              ;17 bytes to move
      CALL MOV_IT            ;call subroutine to move data
      RET                   ;return to basic

;
CHANGIT ENDP
SUBS PROC NEAR
;
GET_ES: MOV SI,SP           ;put sp in si
      MOV AX,SS:[SI+04]      ;si+04 points to basics code segment in stack
      MOV ES,AX              ;es now contains basics code segment
      PUSH CS                ;cs and ds
      POP DS                ;now same segment
      RET                   ;return near

;
MOV_IT: MOV AL,[SI]          ;move byte pointed to by si
      MOV ES:[DI],AL          ;to address pointed to by es:[di]
      INC DI                 ;inc di
      INC DI                 ;by 2
      INC SI                 ;inc si
      LOOP MOV_IT             ;keep moving bytes until cs=0
      RET                   ;return near

;
SUBS ENDP
CODE ENDS
END

```



## COMMUNICATE

### GET YOUR SANYO ON-LINE FOR LESS

- EVERYTHING YOU NEED IN ONE PACKAGE!**
1. 300/1200 BAUD HAYES COMPATIBLE MODEM
  2. COMTEL C400 RS232 SERIAL PORT
  3. VERSACOM
  4. MODEM INTERFACE CABLE

SPECIAL

ALL FOR ONLY \$359.95  
WITHOUT MODEM ONLY \$99.95

#### ALSO AVAILABLE FROM COMTEL:

RGB SWITCH CABLE (FOR SANYO VIDEO BOARD) ...	\$56.00
CUSTOM CABLES .....	CALL
RS232 SERIAL PORT .....	\$45.00
GENDER CHANGERS .....	\$8.00
KEYBOARD & MONITOR EXTENSIONS .....	CALL
AB SWITCHBOX (PARALLEL-SERIAL) .....	\$120.00
VERSACOM COMMUNICATIONS SOFTWARE .....	\$50.00
INTELLICOM COMMUNICATIONS SOFTWARE (VER. 2.1) .....	\$65.00
INTELLICOM COMMUNICATIONS SOFTWARE (VER. 3.23) .....	\$82.00
RACAL VADIC 300-1200 BAUD MODEM (HAYES COMPATIBLE) .....	\$275.00
HAYES AND OTHER MODEMS .....	CALL
MEMORY UPGRADE KIT .....	CALL

#### FOR THE IBM COMPATIBLE 775-885:

PC-TRACS (IBM 3780 BISYNC EMULATOR PACKAGE) .....	\$950.00
MEMORY UPGRADE KIT .....	CALL
PUBLIC DOMAIN SOFTWARE .....	CALL

**COMTEL CORPORATION**  
**2103 E. CEDAR STREET #3**  
**TEMPE, AZ 85281**  
**(602) 829-9471**

PRICES ARE FOR PREPAID WITH CERTIFIED FUNDS.  
PERSONAL CHECKS ALLOW TWO WEEKS FOR CLEARANCE.

### 768K \*\* THE MISSING LINK \*\* 768K EXPANSION \* MEMORY \* CLOCK \* SOFT VIDEO

#### First True Multi-Function Board

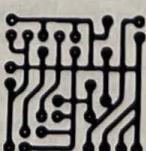
Includes free RAM disk and SPOOLER.  
Run Lotus without the video board.

**UPGRADE 256K TO 768K** — COMPLETELY PLUG-IN — USES 256K RAMS  
 • MAINTAINS EXPANSION BUS WITH TWO 62 PIN EXPANSION PORTS  
 • BUILT-IN REAL TIME CLOCK/CALENDAR (BATTERY BACKUP)  
 • EXPANDED INTERRUPT STRUCTURE TO ACCOMODATE ADDITIONAL DEVICES  
 • SOFT VIDEO OPTION — UNIQUE COMBINATION OF SOFTWARE AND HARDWARE ALLOWS ADDED IBM COMPATIBILITY — SIMILAR TO SANYO VIDEO BD AT NO EXTRA COST  
 • COMPLETE WITH INSTALLATION SOFTWARE  
 • ALL OF WHICH ARE STANDARD FEATURES OF THE "MISSING LINK"

PLUG-IN RAM BOARDS	RETAIL	SALE
256K-768K MISSING LINK (NO MEMORY)	#550-768	\$259.95
256K-768K MISSING LINK (256K MEMORY)	#550-7688	\$339.95
256K-768K MISSING LINK (512K MEMORY)	#550-76816	\$419.95

\*\*CALL FOR LATEST MEMORY CHIP PRICES\*\*

M-DISK, PRINT SPOOLER	\$34.95
4164-150 NS CHIPS	\$CALL
256K CHIPS 120-150NS	\$CALL



**TAMPA-BAY DIGITAL**  
**(813) 443-7049**

**MONDAY-FRIDAY 10AM-6PM EST**

1807 Gulf to Bay Blvd

Clearwater, FL 33516

VISA/MASTERCARD ACCEPTED  
PRICES REFLECT 3% CASH DISCOUNT

24 HR. MODEM (813) 526-1644

# CLUBS

We are compiling a list of Sanyo Users Groups in order that you can find those closest to you and also that they may exchange newsletters, share ideas for topics of discussion at monthly meetings, etc.

Please let us know if we have omitted any clubs and send us complete up-to-date addresses. Also, please notify us if you wish to add or delete any names on this list. Send your information to:

Clubs  
SOFT SECTOR  
The Falsoft Building  
P.O.Box 385  
Prospect, KY 40059

## ALABAMA

Sanyo Users Network, Robert Buster, P.O. Box 4053, Birmingham, AL 35206, (205) 838-2506

Mobile Sanyo Users, Carol Walding, P.O. Box 8505, Mobile, AL 36689

Sanyo Users, Carol Walding, 906 Deer Run Dr., Saraland, AL 36571, (205) 679-1048

## ARIZONA

Sanyo Users Group of Arizona (SUGAR), Fred DeBari, P.O. Box 8316, Mesa, AZ 85204, (602) 892-8229

Tucson Sanyo Users Group, Julie Ingham, Arizona Micro Exchange, 1927 E. Speedway, Tucson, AZ 85719 (602) 721-9078 or Bob Kalen, (602) 742-0345

## CALIFORNIA

Sanyo Users Group of Southern California, Sandy Sigal CFR Group, 4441 Sepulveda Drive, Culver City, CA 90230, (213) 390-8591

Eureka California SUG, Dave Brawdy, 7025 Humbolt Road, Eureka, CA 95501

Sanyo Mis/Dos Users Group (S.M.U.G.), George D. Blair II, 14717 S. Prairie Ave., Lawndale, CA 90260, (213) 973-6888

Cal Lindell, 12155 Edgecliff Pl., Los Altos Hills, CA 94022, (415) 941-2796

Sanyo Users Group Los Angeles, Anastassios D. Retzios, 6706 York Blvd., #31, Los Angeles, CA 90042, (213) 224-7223

Pomona Valley Sanyo Users Group, Don Bowen, 1017 W. Flora Street, Ontario, CA 91762, (714) 983-5269

SLO CLONES Sanyo Users Group, William Leonard, 940 Visalia St., Pismo Beach, CA 93449, (805) 773-1196

## ILLINOIS

Sanyo Mid-Illinois Users Group, John Campbell, 3308 E. Washington St., E. Peoria, IL 61811, (309) 699-2341

Great River Microcomputer Users Group (GRMUG), David N. Wexler, 47 Lake Drive S., RR #9, Quincy, IL 62301, (217) 222-2343

or

Lon Moeller, 1226 Daniel Ct., Quincy, IL 62301, (217) 223-5891

## INDIANA

Bloomington Area Sanyo Users Group, Jerry Farnsworth, 6161 N. Shuffle Creek Road, Unionville, IN 47468, (812) 336-1184

Indiana Sanyo Users Group, Janet Milenki, P.O. Box 48, New Castle, IN 47362, (317) 529-0526

## KANSAS

SANYO'WICHITA (SANWICH), Roland Starbuck, P.O. Box 621, Derby, KS 67307, (316) 682-7998

## KENTUCKY

Fort Knox Sanyo Users Group, LTC Patrick G. Dealtry, 1436B 5th Ave., Ft. Knox, KY 40121, (502) 942-7606

OK-Sanyo Users Group, Eric T. Costello, 2395 South Main St., Highland Heights, KY 41076, (606) 441-4359

Kentucky Area Sanyo Society, Bob MacDonald, Route 1 Box 859, Lewisport, KY 42351

Sanyo Users Quad Society, Jim Grote, P.O. Box 240, Milton, KY 40045, (502) 268-3321

## MARYLAND

Baltimore Sanyo Users Group, Mark Kurzmack, 809 W. Barre, Baltimore, MD 21230, (301) 752-2223

Sanyo Users Group, Atul Jai, 12613 Brunswick Lane, Bowie, MD 20715

Sanyo Users Group, Roger Moos, P.O. Box 1825, Rockville, MD 20850

## MASSACHUSETTS

Sanyo New England, Donald H. Wetzel, 50 Water St. #58, Medford, MA 02155

## MICHIGAN

Western Michigan Area Sanyo Hackers (WE-MASH!), Doug VanderLaan, 13987 Lincoln, Grand Haven, MI 49417, (616) 842-3934

Michigan Sanyo Users (M.S.U.), Lawrence Macionski, P.O. Box 71651, Madison Heights, MI 48071

S.U.G.G.E.T. Sanyo (Special Users Group Gathering Enjoying Sanyo Technology), Ralph Landry, Michigan Software, 43345 Grand River, Novi, MI 48050, (313) 348-4477

## MINNESOTA

Minnesota User Group for Sanyo (M.U.G.S.), Lee King, 908 Harriet Ave., St. Paul, MN 55126, (612) 484-0708

## MISSISSIPPI

Mississippi Gulf Coast Sanyo Users Group, Gary Secunda, 103 McGuire Drive, Long Beach, MS 39560, (601) 863-6359

## MISSOURI

MOARK-Sanyo Users Group, Marshall B. Turner, P.O. Box 504, Golden, MO 65658, (417) 271-3293

## NEBRASKA

SLUGO (Sanyo Local Users), Herb Hickman, 2521 S. 132nd St., Omaha, NE 68144, Voice: (402) 330-0920, Modem: (402) 453-0914

## NEW MEXICO

Border User Group — Sanyo (B.U.G.S.), Albuquerque, NM Chapter, Brian Freeman, Coordinator, 44 Calle Loma Parda NW, Albuquerque, NM 87120, (505) 831-5029

**Border User Group** — Sanyo (B.U.G.S.), Las Cruces, NM Chapter, Bo Barry, President, 1987 Defiance Ave., Las Cruces, NM 88001, (505) 523-2063

## **NEW YORK**

New York Sanyo Users Group, Patrick Yanez, P.O. Box 182, Brooklyn, NY 11217, (718) 855-9029

Long Island Computer Association/Sanyo Users Group, Herbert Jaffe, 57 Elinor Place, Freeport, NY 11520, (516) 868-7461

Upstate Sanyo Users Group (UPSUG), Gary D. Murphy, 2988 Cuylerville Rd., Leischester, NY 14481, (716) 382-3467

Poughkeepsie S.U.G., Eugene Warfel, Oakwood School, Poughkeepsie, NY 12601, (914) 462-7434

## **NORTH CAROLINA**

J.A.C.P.O.T. (Jacksonville Area Computer Programmers and Organized Telecommunications), Keith A. Hylton, 127B Henderson Drive, Jacksonville, NC 28540, (919) 347-7007

Sanyo CP/M-MS/DOS Group, John L. Johnson, 707 Edge Hill Road, New Bern, NC 28560, (919) 638-6976

Triangle Sanyo Users Group, Amnon Nissan, 1603 Jones Franklin Road, Raleigh, NC 27606, (919) 851-7609

## **OHIO**

Sanyo Users Of Central Ohio, 5760 Crawford Drive, Columbus, OH 43229, (614) 846-3330

Dayton Area Sanyo Users Group, Mel Lammers, 4201 Rushmore, Dayton, OH 45430, (513) 426-7169

Greenville Users Group, John Desmond, c/o Hansbarger's, 1119 Dayton Road, Greenville, OH 45331, (513) 548-3174

Cincinnati Sanyo Users Group, Tim Mullen, 336 Miami Valley Drive, Loveland, OH 45140, (513) 831-6799

Akron Sanyo Computer Club (ASCC), Bruce Creager, 5425 Diana Lynn Dr., Stow, OH 44224, (216) 655-2371

Sanyo Users Group/Toledo Area, Daniel J. Kuna, Ph.D., 820 Security Bldg., 243 North Huron, Toledo, OH 43604, (419) 244-4423

Youngstown Users Group, George Beelen, 817 Washington St., Youngstown, OH 44520, (216) 545-0824

Sanyo PC Users Group, Roger Wilcox, 425 Woodlawn Avenue, Zanesville, OH 43701

## **OKLAHOMA**

OKSUG (Oklahoma Sanyo Users Group), Steve Garman, 7701 N. Broadway A-6, Oklahoma City, OK 73116, (405) 842-3236

## **OREGON**

Northwest Sanyo Enthusiasts (NWSE), Bob Henley, P.O. Box 66173, Portland, OR 97266, (503) 658-5490

## **PENNSYLVANIA**

P.L.U.G., Scott Higgs, 316 Locust Ave., Ardmore, PA 19003, (215) 642-0288

Lehigh Valley Users Group, John Orlando III, 1111 Mica Circle, Bethlehem, PA 18017, (215) 691-2794

## **TEXAS**

Amarillo Area Sanyo Users Group, Les Sparks, Box 2052, W.T. Station, Canyon, TX 79016, (806) 622-0547

HOUston Sanyo Business Users Group, Steve Solomon, 7950 Bellfort Avenue #37, Houston, TX 77061, (713) 644-1135

Sanyo Users of Houston Computers for Business, Melba Stone, 6680 Highway 6, South, Houston, TX 77083

West Houston Sanyo Users Group, Frank Havel, 20203 Kempsford Court, Katy, TX 77450, (713) 492-7369

North Texas Sanyo Users Group, Jerry R. Barnes, 637 Pinehurst Dr., Richardson, TX 75080, (214) 783-9147

San Antonio Sanyo Users Group, Gary E. Joslyn, P.O. Box 2636, Universal City, TX 78148-1636

## **UTAH**

Sanyo Users of Provo Utah Region (S.U.P.U.R.), Lloyd Finlinson, P.O. Box 556, Provo, UT 84603, (801) 224-7550

Salt Lake Sanyo Users Group, Thomas Berg, 4346 Fortuna Way, Salt Lake City, UT 84124, (801) 272-4743

## **VIRGINIA**

Washington Area Computer Users Group, Edward Cavert, 4032 Hadley Lane, Fairfax, VA 22032

Sanyo Users Group, Tom Harder c/o Beach Business Machines, 3845 Bonney Rd., Virginia Beach, VA 23452

Tidewater Virginia Sanyo Users Group, Tom Hardes, 4137 Virginia Beach Rd., Virginia Beach, VA 23452, (804) 463-2028

Peninsula Sanyo Computer Group, Jeanne Robeson, P.O. Box 1284, Yorktown, VA 23692

## **WASHINGTON**

Sanyo National Users Group (S.N.U.G.), Michael Russell, P.O. Box 2084 CS, Pullman, WA 99163, (509) 878-1714

Spokane SNUG LUG, Joanne Elliott, E. 13124 Nixon, Spokane, WA 99216

Puget Sound Sanyo Users Group, Charlie Quante, 1804 S. 19th, Tacoma, WA 98405

Sanyo Northwest Users Group (S.N.U.G.), Alma Greenwood, 706 Dennis Street SE #9, Tumwater, WA 98501, (206) 357-7208

## **CANADA**

Sanyo Users Group, Trekker Armstrong, 934 5A Street NW #A, Calgary, Alberta, Canada T2N 1R4

Sanyo Canadian Users Group, Eric Lillius, Box 210 Mountain Street, Haliburton, Ontario, Canada K0M 1S0, (705) 457-2774

Sanyo Microcomputer Users Group (SMUG), Cavan Kelly, 116 Phillip Ave., Scarborough, Ontario, Canada M1N 3R4

S.V.I.T., 116 Phillip Ave., Scarborough, Ontario, Canada M1N 3R4

P.P.G. Canada Inc., Rob Murray, 456 Albert Street, Strathroy, Ontario, Canada N7G 3J1

Montreal Users Group, Richard Bertrand, 10842 Rue Ethier, Montreal, Quebec, Canada H1H 3G4

## **ENGLAND**

Sanyo MBC 550/555 User Group, M.H. Syed, 53 Acacia Grove, New Malden, Surrey KT3 3BP, England

## **FRANCE**

Sanyo-Club, Philippe Chardon, 1, Rue de Clementville, 34000 Montpellier, France

## **JAPAN**

Okinawa Sanyo Users Group, Craig D. Veal, PSC 2 Box 14345, APO SF 96367

## **NEW ZEALAND**

Sanyo Users Group NZ, Noel Weeks, P.O. Box 28-335, Remuera, Auckland 5, New Zealand

## **WEST GERMANY**

Central European Sanyo Users Group (CESUG), 2 Lt. David A. Ferreira, P.O. Box 3101, APO NY 09109-5370

## **Sanyo Bulletin Board Systems**

### **CALIFORNIA**

29 Palms, 300 Baud, 24 hours, (619) 368-3839

Sanyo SIG/San Diego, 300/1200 Baud, Evenings, (619) 454-8876

### **COLORADO**

Sanyo BBS, 300/1200 Baud, 24 hours, (303) 762-9122

### **FLORIDA**

Micro's Etc., 24 hours, (305) 831-1679

Software Connection, 300/1200 Baud, 24 hours, (813) 526-1644

### **ILLINOIS**

NationServ, 300/1200 Baud, 24 hours, (618) VIP-2291

### **KANSAS**

Bit Bucket, 300/1200 Baud, 24 hours, (316) 343-8028

Blustem Telecom, 300 Baud, 24 hours, (316) 321-5072

### **MASSACHUSETTS**

Sanyo New England, 300/1200 Baud, 24 hours, (617) 396-8306

### **MICHIGAN**

Computers U.S.A., 300/1200 Baud, 24 hours, (313) 547-5414

Level IV Products, 300/1200 Baud, 24 hours, (313) 525-3040

Mt. Clemens Download, 300/1200 Baud, 24 hours, (313) 286-6333

Novi Download, 300/1200 Baud, 24 hours, (313) 348-4479

Sanyo Centre, 300 Baud, 24 hours, (313) 398-0996

### **NEW MEXICO**

B.U.G.S. FidoNet, 300/1200 Baud, 10 p.m.-10 a.m., (505) 822-8268

Teachers Pet, 300/1200 Baud, 24 hours, (505) 646-5194

### **NEW YORK**

METRO BBS, 300/1200 Baud, 24 hours, (718) 596-5802

### **OHIO**

Tri-County Users, 300/1200 Baud, 24 hours, (216) 331-5620

### **TENNESSEE**

Rock City Student BBS, 300/1200 Baud, 24 hours, Data: (615) 875-6311, Voice: (615) 877-3097

### **UTAH**

The Beehive, 300 Baud, 24 hours, (801) 392-6646

### **WASHINGTON**

Missing Link, 300/1200 Baud, 24 hours, (206) 878-1823

### **CANADA**

Windsor Canada, 300 Baud, 5 p.m.-12 p.m., (519) 254-2459

Nova Scotia, Basic Computer Sales, 300/1200 Baud, 6 p.m.-8 a.m., Atlantic Standard, (902) 454-8344



# BUSINESS SECTOR



**CHARLOTTE & BRIAN STONE**  
Soft Sector Contributing Editors

**Q.** Could you please tell me how to print page numbers on alternate sides of the page with WordStar? I would like even numbers on one side and odd numbers on the opposite side of the page.

Leo A. Dammer  
Upper Saddle River, NJ

**A.** WordStar will alternate sides of the page when printing page numbers. For normal page numbering you would leave the default, and to omit page numbers you insert .OP at the top of your file. Some examples of page numbering are as follows:

.HE Business Sector	Page # (header with page numbers)
.FO Brian & Charlotte Stone	Page # (footer with page numbers)
.PC18	(page numbers indented 18 spaces from the left margin)

To print the '#' along with the page number you would insert the '\' and an additional '#' as shown below:

.FO Page \## will print  
Page #13

Now to be able to alternate sides of the page with even numbers (2,4,6,etc.) on the left side and odd (1,3,5,etc.) on the right side; this can be used in the .HE (header) as well as the .FO (footer).

.HE^K Page #  
or  
.FO^K Page #

You must add the spaces between the 'K' and the 'P' in page. Whenever WordStar prints an even-numbered page, the spaces will be suppressed in a header or footer by the ^K. Odd numbered pages will have the spaces inserted just as you added them. Headers and footers can also have bold, underlining or any special functions you desire, but they can only be one line long.

**Q.** In August I purchased an issue of SOFT SECTOR and on Page 43, I found an ad for StarPak and EasyPak software for the Sanyo MBC-550 series computers from a Scottsdale, Arizona company. I purchased the StarPak software only to find out that it would only run on a machine with double-sided disk drives, which I do not have. I immediately called Scottsdale Systems and was advised that I should call Sanyo because they could do nothing. Can you help me? It seems I am stuck with software that I cannot use.

Mark A. Brennan

**A.** Your investment in software is not lost; all that is necessary is to have someone with a Sanyo, IBM, Compaq or any computer with double-sided disk drives copy the double-sided disks onto single-sided disks, and your StarPak software will work just fine.

If the company you purchased them from was at all reputable, they would have offered to do this for a small fee rather than tell you to go talk to Sanyo.

**Q.** I have a Greywolf modified Sanyo MBC-550 with two 800K disk drives. I've been using "Nibble Notch" (diskette notcher) to allow use of both sides of the diskette. I have had great success on my Atari, and thought I would double my diskette capacity on the Sanyo, as well. I had no problem transferring data to the back side of disks, but all of the data tended to disappear after a couple of days. I can only assume that the felt pad on the bottom side was abrading the oxide every time I ran the front side of the diskette.

David E. Marcus  
El Centro, CA

**A.** Regarding your using "Nibble Notch" on your double-sided 800K drives in a Sanyo "Greywolf" computer: The reason your data is mysteriously being erased by the felt pad on the bottom side of the disks is because you have a disk drive with two heads; one for each side of the diskette with no felt pad, unlike the single head on your Atari. When you format a disk in the Sanyo, it does both sides at the same time (400K per side). As a result, when you think you are formatting the second side, you are actually erasing the complete disk and starting over. It is not necessary to notch disks for the Sanyo with 320K or 360K disk drives.

**Q.** I have been using CalcStar and find that two commands do not work correctly as described in the literature; these are "Delete Entry" and "Format Precision." I have tried everything, and the only thing that works is to move the cursor off screen then back on again. Can you help me? I wrote to Sanyo to find out what files should be on a system disk and they did not answer. Also, where can I get ribbons for my Silver-Reed daisy wheel printer?

Peter G. Hundt  
Mahwah, NJ

**A.** Regarding your problems with CalcStar: The two commands ;D and ;F work properly except for occasionally not updating the screen. Your problem is the fault of the version of the program, rather than not using the commands correctly. If you are going to do any serious spreadsheet work, I would suggest you purchase SuperCalc 3 Release 2 and the Video RAM Board (a must). This is possibly one of the best spreadsheets I have ever seen and the easiest to use.

Regarding what files should be on your system disk: This is a difficult question to answer without knowing what you want to do. If you are using CalcStar, you need a system disk backup with DOS and COMMAND.COM, plus all of the CalcStar files. You will need these files for the following reasons:

COMMAND.COM	Must be on every disk that you will boot in Drive A
FORMAT.COM	To make data disks and additional DOS disks
DEBUG.COM	To do some of the patching found in SOFT SECTOR
DISKCOPY.COM	To do full disk copies
CHKDSK.COM	To get information on disk usage and file space

If you have not found a source for the Silver-Reed ribbons, try MichTron, a SOFT SECTOR advertiser.

**Q.** I have a Sanyo MBC-555 which we have been using in our office for about 18 months. We recently purchased an IBM-PC/XT with 640K of RAM and a 20 Meg hard disk drive. I am running all of the MicroPro software on both machines but cannot get CalcStar to work. Every time I load CalcStar, I get a "Not Enough

*Memory Error*" on the IBM. The Sanyo only has 256K of RAM and CalcStar runs on it. What is happening? Also, how do you turn the page numbering off in WordStar?

Alma Greenwood  
Tumwater, WA

**A.** The version of *CalcStar* that you received when you purchased your Sanyo MBC-555 will not run on an IBM PC-XT with more than 512K of RAM memory. The loader for the program reads the system for the amount of memory installed. If you have more than 512K it will die every time. I would suggest you purchase an IBM version of *CalcStar*. It should be inexpensive as MicroPro has discontinued the product. Better yet, purchase *SuperCalc 3* Release 2 which will run on the IBM and on your Sanyo if you install the Video RAM Board.

To eliminate page numbering in *WordStar*, put the following dot command at the top of your file, .OP.

**Q.** I was not satisfied with SpellStar and decided to purchase Webster's New World Spelling Checker published by Simon & Schuster Computer Software Division of Simon & Schuster. I cannot get it to work and wrote to the publishers, asking them if it should run on the Sanyo. More than a month has passed and no answer. Can you tell me how to make it work?

Edward E. Golden  
Oxnard, CA

**A.** I have not had the opportunity to work with Webster's New World Spelling Checker and am sorry to hear you bought it only to find that it does not work on the MBC-550 series. Since this is an IBM program, it would probably work if you were using the Video RAM Board.

It is unfortunate that software companies sell a product and cannot take the time to answer a letter when we try to find out why their product will not work.

**Q.** Is there any way to run IBM "autoboot" programs on the Sanyo? Is there any way to defeat the autoboot in programs such as IBM's Adventure? Has any group published a list of the IBM programs that will not run on the Sanyo MBC-550 series of computers?

Celeste Selby  
Dandan, Guam

**A.** As a rule, IBM autoboot programs do not run on the Sanyo series. I do not have the IBM *Adventure*, but you might be able to run the program from Drive B after booting with Sanyo DOS.

Sanyo does have a list of programs that have been "tested" to run on the MBC-550 series. To publish a list of programs that will not run would be a monumental undertaking because of its length. The list of tested software is available direct from Sanyo in New Jersey. The cost and how to order information is in the Ask Sanyo column in the October '85 issue of SOFT SECTOR.

**Q.** I use EasyWriter I for word processing and cannot get my Sanyo PR-5000 daisy wheel printer to boldface or underline with the correct driver installed. Is there a command that will let me do these two functions in the normal manner?

Erwin C. Gonzalo  
Vallejo, CA

**A.** Please see Appendix B, Page 11 of the *Easy Writer I* manual for the information on how to get bold and underline from unsupported printers.

**Q.** My company has some preprinted forms that I would like to use with my MBC-555-2 and a Sanyo PR-5000 daisy wheel printer. I am having quite a bit of difficulty in getting the forms to line up correctly. The forms are set up on five lines per inch. How can I change the vertical motion index of the printer to make these forms usable? What is ASCII? I am having trouble understanding it.

Harry Hulsizer  
Midwest City, OK

**A.** After spending some time with your company form and a printer's rule, I have found that the form in question is not printed five lines to the inch. Unfortunately, it is not printed four lines per inch as it looked at first measurement. Four lines to the inch means that there are four printed lines in every inch, not the five lines per inch that make up the horizontal ruling. I have printed some samples, with a variety of line spacing, for you to look at. These will confirm that your company forms are not computer compatible (just like most of the ones used by the company I work for).

The Sanyo PR-5000 cannot do exactly five lines per inch. This is because vertical

motion is divided into 48 parts, i.e., 1/48ths of an inch. As a result, 48 cannot be evenly divided by five. The closest possible is 5.3 lines per inch.

ASCII is an acronym for "American Standard Code for Information Interchange." This is a standard by which a variety of computers and peripherals from different manufacturers can understand (or communicate) with each other. An example of this is the capital letter 'A' has an ASCII value of 65. Your computer sends a value of 65 to your printer and you get an 'A' printed. All printers, which understand ASCII, will print an 'A' and so on. This holds true for almost all information sent to the printer except specialized control codes and functions peculiar to some printers.

**Q.** I am trying to use an MBC-555-2 with 256K of memory and CalcStar to handle high school grade books. I am very frustrated with the apparent lack of memory because I can only get about 120 cells. This will not even allow enough entries for one student. What am I doing wrong? How can I get larger spreadsheets?

Tim Plichler  
Arlington, WA

**A.** I do not know why your spreadsheet is so small. We are able to get some fairly large ones in our machine. Possibly, you are using too many blank cells which count the same as if they were used.

If this does not help, please send a disk with the spreadsheet so we can see what you are doing.

Charlotte Stone, office manager for the Detroit office of the Shaw/Walker Co., has been using a Sanyo computer in her daily work routine since October 1983. Brian Stone has been using a variety of Sanyo computers since May 1983. Both have been involved with computers since their first purchase in July of 1978.

# SOFT TALK

The following products recently have been received by SOFT SECTOR, examined by our magazine staff and approved for the *Soft Sector Seal of Certification*, your assurance that we have seen the product and have ascertained that it is what it purports to be.



## The Fox

Our Fox system is more than the only complete 16-bit 8088 computer for less than \$1,000! The Fox includes more storage, more extras, and more software than systems costing twice as much.

1.6 Megabytes! Dual Drives with 800K storage on each, yet the Fox is nimble enough to read and write to standard 160K, 320K, and 360K formatters.

All the Extras that cost extra on other machines are included in our price. You get a full 12" 25x80 display monitor in amber or green, plus RGB color output, a printer port, a better keyboard, and a full 256K of RAM.

Free Software All the software most people will ever need including: MS-DOS 2.11, HAGEN-DOS, DOS Tutor, WordStar 3.3, EasyWriter, Spell, Mail Track, FILEBASE, CalcStar, games, graphics, utilities, and a graphics BASIC.

Strictly speaking the Fox isn't IBM compatible, but will run hundreds of the same programs including dBASE II, Multiplan, and Turbo Pascal. Because the Fox is born on a totally automated assembly line in Japan we can back it with a full one year limited warranty. For a free booklet explaining why the Fox is your best buy, call 1-800-FOR-AFOX and leave your name and address after the beep.

**The Fox ..... \$995**

## Scottsdale Systems

617 N. Scottsdale Road, Suite B, Scottsdale, Arizona 85257

(602) 941-5856

Call 8-5 Mon.-Fri.

*QuikPro+* allows you to create programs without knowing anything about programming. It gives you the flexibility to change any programs you create. This program is designed to save you hours of typing and debugging because the programs are error free BASIC programs that are ready to run or can be easily modified.

*QuikPro+* is currently available for \$74.50 from ICR FutureSoft, 1718 Kingsley Ave., P.O. Box 1446, Orange Park, FL 32067; (904) 269-1918.

\*\*\*

**RIGHTWORDS** is a dictionary extension utility for use with the program *Right Writer*. This utility allows you to customize the *Right Writer* dictionaries to your own needs. It allows you to add 100,000 words to your dictionary. You can also add special terms that are widely used in your profession.

*RightWords* automatically sorts the word list and eliminates any duplicate words. The dictionary contains over 45,000 words and it is recommended that you use this to replace the *Right Writer* 1.1 release 30,000 word dictionary.

*RightWords* is currently available for \$29.95 from DecisionWare, Inc., 2033 Wood Street, Suite 218, Sarasota, FL 33577; (813) 952-9211.

\*\*\*

**QUIKPRO+** is a complete files maintenance/data entry program generator. In other words, it actually writes the program for you. *QuikPro+* is designed to eliminate the tedious task of hand writing file maintenance programs.

## MVP SOFTWARE

*Productivity power without crashing your budget.*

### HOME MANAGEMENT 1 - \$59.95

Budget - versatile checkbook and personal finances manager; includes these features:

- user-defined expense and deposit categories
- menu-driven; easy to use and very fast
- printout options and graphic data display
- accepts up to 4000 entries
- encodes data for security
- reconciles bank statement

Typer - turn your Sanyo into a memory typewriter  
Home Forms - produces 3 useful forms

NumCalc - fast precision calculator

Home Projects - home projects management system

### BASIC PROGRAMMER'S TOOLKIT - \$39.95

5 tools for writing, editing and compiling BASIC programs, PLUS notes on differences between IBM and Sanyo BASIC and patches for the IBM compiler

### HOME FINANCE MANAGEMENT - \$39.95

4 programs to plan your budget, assess spending, amortize and compare loan values, save on taxes, plus much more. A must for domestic managers!

**SPECIAL OFFER:** Buy any package and get our utilities (9 programs) for \$14.95 - 50% off!

**ASK ABOUT OUR GREAT GAME PACKAGES**

Call or write to order or for free catalog

### MVP SOFTWARE

1035 Dallas S.E.

Grand Rapids, MI 49507

(616) 245-8376

MC/VISA accepted at no extra charge

Add \$3.00 shipping per order

Michigan residents add 4% sales tax

**DEALER INQUIRIES INVITED**

**TAILORED TYPE** is what you get with *Printworks* from SoftStyle, Inc. This company has produced two programs (both entitled *Printworks*) for use with a dot matrix or laser jet printer. These programs are designed for use with IBM-compatible computers.

*Printworks* for the dot matrix printer allows you to change the size of your type, summon particular scientific symbols, print foreign languages and even create your own characters. Should your spreadsheet unexpectedly become wider than your paper, *Printworks* will rotate your text and begin printing sideways. You are also given a choice of fonts such as Roman, Oration, Greek and more.

*Printworks* for the laser jet printers allows you to reset margins, print multiple copies and select different fonts by pressing a minimum of keys. It allows you to merge any screen image wherever you desire on the page along with the text you want. You can even shrink or enlarge the image for more flexibility.

*Printworks* for lasers consists of three software modules: a driver, which allows your computer to communicate with your laser printer; a set-up utility which waits in memory until you call it to set up your

printer; and a simple tailoring utility which can be used to change the defaults that are automatically set up in your laser printer when *Printworks* is installed.

Both programs support a multitude of software packages and *Printworks* for dot matrix printers can be tailored to control over 30 different dot matrix printers. Both require 256K and are currently available for \$69.95 from SoftStyle, Inc., Hawaii Kai Office Building, Suite 205, 7192 Kalanianaole Highway, Honolulu, HI 96825; (808) 396-6368.

\* \* \*

**NUMBER WORKS** is a software package used for budgeting, financial planning, expense reports, forecasting and more. It allows you to do "What if?" calculations, spot trends and patterns and make decisions based on accurate, up-to-date figures. It contains built-in functions which reduce complex calculations to a few keystrokes.

Features of *Number Works* include: 40 built-in functions for math, finance, and more; instant on-screen help; self-paced practice lessons; four ready-made worksheets; up to eight windows for seeing different parts of your worksheet; and easy to read instructions.

## Submitting Material

Contributions to SOFT SECTOR are welcome from everyone. We like to run a variety of programs which will be useful/helpful/fun for other Sanyo owners.

• **FORMAT:** Unless the program accompanying your submission is less than 10 lines, we must have the program itself on disk. We will print out the listing to our specifications. We simply cannot take the time to key in (and debug our typing errors) material which is longer than that. Editorial copy can also be included on disk, using any of the word processors currently available for the Sanyo 550, 555 or 775. However, please also include a double-spaced hard copy of your editorial material and hard copy of your program listing. Please do not send text in all capitals. Use upper- and lowercase. While it is a big help to us in typesetting for you to send your article saved on disk using the ASCII option, it is not mandatory. But we must have, at the very least, a double-spaced hard copy of the article.

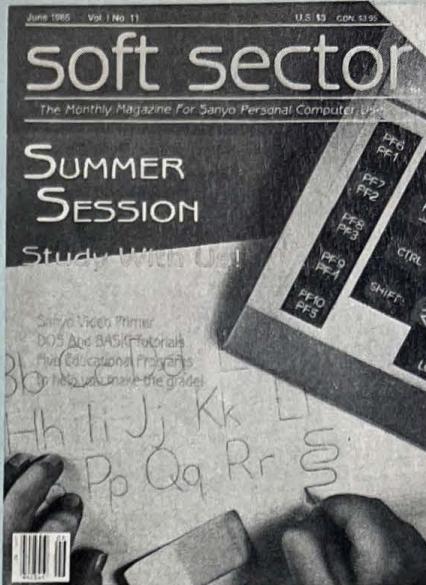
• **WHAT TO WRITE:** Anything with a practical application. If it interests you, it will probably interest a lot of others. However, we vastly prefer articles with accompanying programs which can be entered and run. We can prepare finished tables, diagrams and schematics from your rough draft if you provide legible copy and full directions. We have a continuing need for short articles with short listings.

We do pay for submissions, based on a number of criteria. Those wishing remuneration should *so state* when making submissions.

For the benefit of those who wish more detailed information on making submissions, please send an SASE to: Submissions Editor, SOFT SECTOR, The Falsoft Building, P.O. Box 385, Prospect, KY 40059. We will send you comprehensive guidelines.

Please do not submit programs or articles currently submitted to another publication.

## soft sector



## Back Issue Availability

Back copies of many issues of SOFT SECTOR are still available.

All back issues sell for the single issue cover price. In addition, there is a \$2 charge for the first issue plus 50 cents for each additional issue mailed in the U.S. When possible, issues are mailed UPS. The postage cost in Canada and Mexico is \$3 for the first issue and \$1 for each additional issue.

VISA, MasterCard and American Express accepted. Kentucky residents please add five percent state sales tax. In order to hold down costs, we do not bill and no C.O.D. orders are accepted.

We suggest you order back issues you want now while supplies last.

To order, just fill out the form on the next page and mail it with your payment to:

**Soft Sector  
The Falsoft Building  
P.O. Box 385  
Prospect, KY 40059**

# SOFT SECTOR

The Monthly Magazine

## BEAT THE HEAT

Summertime Fun At The Keyboard



**GRAPHICS:**  
Unfun The Per  
Star-Spangled Computer

**UTILITY:**  
A Window Into  
With Horizontal Scrolling

**SIMULATION:**  
Escape The Trap  
Of The Pixel Maze

**ACTION:**  
Defend The Earth  
From Alien Hordes



**PLUS:**  
Create Big-Letter Signs  
And Much More

## BACK ISSUE ORDER FORM

Please send me the following back issues:

(Payment must accompany back issue orders.)

### VOLUME 1

NO.	MON.	YR.	PRICE	
1	AUG.	'84	PREMIER ISSUE	\$3.00
6	JAN.	'85		\$3.00
7	FEB.	'85		\$3.00
8	MAR.	'85		\$3.00
9	APR.	'85		\$3.00
10	MAY	'85		\$3.00
11	JUNE	'85		\$3.00
12	JULY	'85		\$3.00

### VOLUME 2

1	AUG.	'85	\$3.00	<input type="checkbox"/>
2	SEPT.	'85	\$3.00	<input type="checkbox"/>
3	OCT.	'85	\$3.00	<input type="checkbox"/>
4	NOV.	'85	\$3.00	<input type="checkbox"/>
5	DEC.	'85	\$3.00	<input type="checkbox"/>
6	JAN.	'86	\$3.00	<input type="checkbox"/>
7	FEB.	'86	\$3.00	<input type="checkbox"/>
8	MAR.	'86	\$3.00	<input type="checkbox"/>

TOTAL \_\_\_\_\_

SHIPPING & HANDLING\* \_\_\_\_\_

KY RESIDENTS ONLY \_\_\_\_\_

ADD 5% \_\_\_\_\_

TOTAL AMOUNT ENCLOSED \_\_\_\_\_

\* See reverse side.  
Save money on back issues.  
See the binder ad on Page 27.

NAME _____	ADDRESS _____	STATE _____	ZIP _____
CITY _____	PAYMENT ENCLOSED OR <input type="checkbox"/> CHARGE TO:	PHONE # _____	
	<input type="checkbox"/> VISA <input type="checkbox"/> MC <input type="checkbox"/> AE		
SIGNATURE _____	CARD # _____	EXPIRATION DATE _____	

**Number Works** requires an MBC-675, 775 or 885 and is currently available for \$39.95 from Paperback Software International, 2612 Eighth Street, Berkeley, CA 94710; (415) 644-2116.

\*\*\*

**PAPERBACK WRITER** is a word processor for everyday use. It includes everything you need to write, edit and print your work. It features basic word processing features such as block operations, search and replace, on-screen boldface and underlining, function keys and on-screen help.

*Paperback Writer* requires an MBC-675, 775 or 885 and is currently available for \$99.95 from Paperback Software International, 2612 Eighth Street, Berkeley, CA 94710; (415) 644-2116.

\*\*\*

**EXECUTIVE FILER** is the computer version of ordinary file cabinets, complete with cards and drawers. It provides instant cross-indexing and information retrieval. With it, you can keep notes, presentations, outlines, catalogues, spreadsheets, graphics and more, organized with a keystroke.

*Executive Filer* can hold up to 1,500 words per file card and 64,000 cards per cabinet. You can assign your own keywords for instant card retrieval. It can be used to store and retrieve notes and reference material, standard paragraphs, outlines, spreadsheets and graphics, facts, figures and more.

*Executive Filer* requires an MBC-675, 775 or 885 and is currently available for \$69.95 from Paperback Software International, 2612 Eighth Street, Berkeley, CA 94710; (415) 644-2116.

\*\*\*

**EXECUTIVE WRITER** is a full-featured word processing program which includes

all the standard editing and printing features such as horizontal and vertical scrolling, whole-screen entry and editing with wordwrap, paragraph reformatting, global search and replace, automatic centering and right justification, on-screen boldface and underlining and more.

*Executive Writer* requires an MBC-675, 775 or 885 and is currently available for \$69.95 from Paperback Software International, 2612 Eighth Street, Berkeley, CA 94710; (415) 644-2116.

\*\*\*

**PROCESSING WORDS** is a book which reviews the most important word processors — including the new *Microsoft Word* and *VisiWord Plus*. It helps shed new light on special software tools such as spelling checkers, style checkers, indexers, mailing lists, etc.

*Processing Words* covers the newest developments in peripheral hardware such as printers, buffers, interfaces, hard disks, special purpose monitors, the mouse, add-on keyboards and more. This book also devotes an entire chapter to the special problems of word processing on PC compatibles.

*Processing Words* is currently available for \$16.95 from Hayden Book Company, 10 Mulholland Drive, Hasbrouck, NJ 07604; (201) 393-6353.

\*\*\*

The *Seal of Certification* program is open to all manufacturers of products for Sanyo MBC-550/555, 675, 775 and 885 computers, regardless of whether they advertise in SOFT SECTOR.

By awarding a *Seal*, the magazine certifies the product does exist — that we have examined it and have a sample copy — but this does not constitute any guarantee of satisfaction. As soon as possible, these hardware or software items will be forwarded to SOFT SECTOR reviewers for evaluation.



## SUBSCRIPTION INFORMATION

Your copy of SOFT SECTOR is sent second class mail. If you do not receive your copy by the 15th\* of the month of the cover date, send us a card and we will mail another. \*Canadian subscribers and foreign air mail allow two additional weeks.

You must notify us of a new address when you move. Notification should reach us no later than the 10th of the month prior to the month in which you change your address. Sorry, we cannot be responsible for sending another copy when you fail to notify us.

Your mailing label also shows an "account number" and the subscription expiration date. Please indicate this account number when renewing or corresponding with us. It will help us help you better and faster.

For Canadian and other non-U.S. subscribers, there may be a mailing address shown that is different from our editorial office address. Do not send any correspondence to that mailing address. Send it to our editorial offices at The Falsoft Building, P.O. Box 385, Prospect, KY 40059.

# RACKSELLERS

# RACKSELLERS

The stores listed below carry **SOFT SECTOR** on a regular basis and may have other products of interest to Sanyo Personal Computer Users. We hope you will patronize those in your area.

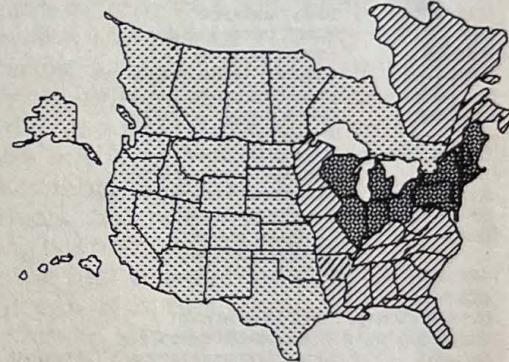
The stores listed below carry software products of interest to Sanyo Pe... patronize those in your area.	
<b>ALABAMA</b> Birmingham Madison Mobile Montgomery	The Computer Store Madison Books Mail Tel Trade-N-Books
<b>ARIZONA</b> Flagstaff Phoenix Tempe	Datasystems Gemini Computers Books, Etc. Computer Library
<b>CALIFORNIA</b> Folsom Huntington Beach La Jolla Lancaster Los Angeles N. Hollywood Norco Riverside Sacramento San Bruno San Diego	Computers, Etc. Hammer Industries Affordable Computers Desert Computing OPAMP Levity Distributors West Custom Studios Software Centre International Home Computing Centers, Inc. Byte & Floppy Computers Programs Unlimited
San Luis Obispo Santa Maria Santa Rosa Upland	El Corral Bookstore Paradise Computer Systems Information Systems Unlimited Sawyer's News, Inc. Computer Haven Friendly Computers ECX Computer Co.
<b>COLORADO</b> Colorado Springs Englewood Security	The Computer Farm Whole Life Distributors Video Communications & Computers, Inc.
<b>CONNECTICUT</b> Manchester	Computer Training Institute
<b>DELAWARE</b> Wilmington	Nor-Mar — The Smoke Shop
<b>FLORIDA</b> Boca Raton Brooksville Clearwater Ft. Lauderdale Gainesville Jacksonville	Software, Software, Inc. All American Electronics Southern Micro Computer Co. Total Information Centers Computerized Applications AA Computer Exchange Florida Computer Resources Electronic Specialty Products City News Stand
Longwood Melbourne	B & B Office Equipment Micro's, Etc.
Merritt Island Miami	Computers, Computers, Computers Computer Image Book Mania PC Distributors
Orlando	Rainbow Computer Center
Point Ornge Port Rickey Sanibel Island	Micro's Etc. Computer Trends Sanibel Audio
Sarasota Seminole Shalimar St. Petersburg	Family Computers Lacey Computer Co. Discount Discs Software Connection
Tampa	Personal Computer Center Southern Micro Computer Co.
<b>GEORGIA</b> Atlanta	The 64 Store
<b>COLUMBUS</b>	Guild News Agency Alboes Computers
<b>IDAHO</b> Moscow Nampa	H & S Computer Supplies Canyon Computers & Communications
<b>ILLINOIS</b> Belleville Chicago Downers Grove Rockford Salem	Software Or Systems Hyde Park Computers Computer Grove Learn-A-Bit Computers Salem Computer Systems
<b>INDIANA</b> Ft. Wayne	Bytrex Digital Perspectives Accolade Computer Design A Computer Store
<b>KANSAS</b> Lawrence Wichita	Computer Outlet Wichita Computer & Supply
<b>KENTUCKY</b> Cynthiana Louisville Owensboro Prospect	Accounting Data Corp Software Source Computer Stall Falsoft, Inc.
<b>LOUISIANA</b> Gretna Sulphur Thibodaux	The Computer Supply Store Home Computer & Software Great Southern Computer Systems
<b>MAINE</b> Bangor	Downeast Specialty Co.
<b>MARYLAND</b> Baltimore Bethesda Millersville Pasadena Silver Springs	Computers Edge The Software Store Comp-U-Type RW Electronics Computer Center A-OK Computers
<b>MASSACHUSETTS</b> Danvers	Waldorf Computer Micro Computer Co.
<b>MICHIGAN</b> Ann Arbor Berkley Charlotte Dearborn Fenton	University Cellar Family Computers Computer Options Alpha-K Computer Co. Computer Control Systems
<b>MINNESOTA</b> Minneapolis Rochester	Petry Products Bursma Electronic Dist. Co. Programs Unlimited Computers Plus, Inc. 8-Bit Corner MI Software C/C Computer Systems
<b>MISSOURI</b> Aurora Creve Coeur Independence Republic St. Louis	MichTron Rochester Book Center New Logic Computers Popular Computer Centers, Inc. Creative Center Gerry's Book Co. Ye Olde Computer Shoppe
<b>NEBRASKA</b> Omaha	Computer Exercise World Datalink
<b>NEVADA</b> Las Vegas Reno	Southland Electronics Alcor Associates Digital Enterprises, Inc. Franklin Computers Software Centre
<b>NEW JERSEY</b> Elizabeth Lake Hopatcong Lawrenceville Ocean City Westmont	Rambyte Computer Institute
<b>NEW YORK</b> Albany Bronx Buffalo Chappaqua Clifton Park Cooperstown East Rochester Great Neck Hicksville Lake Grove Plattsburgh Rochester Wappingers Falls	Computers & Components Dexport Computer Systems Jefferson Computer Center Microcon Computer & Software The Computer & Software Store American Computers
<b>NORTH CAROLINA</b> Atlantic Beach Jacksonville Mt. Airy	VBS MicroSystems 2 M Systems Mountain Computers
<b>NORTH DAKOTA</b> Buxton Riverside	Systematics Computer Associates
<b>OHIO</b> Ashland Canal Fulton Canton Cincinnati Columbus Euclid Fairborn Kettering Lombard Mafield Heights Marion	Infopro Gemstone Computing Micro's Etc. Video Barn The Book Rack Computer Warehouse Genesis Micro Systems Electronic Connexion Complete Computing Programs Unlimited Marion Computer Center
North Olmstead St. Clairsville	Software Centre International D & K Computer Sales & Service
<b>OKLAHOMA</b> Oklahoma City Tulsa	Merit Computers Data Station — Tulsa
<b>OREGON</b> Beaverton Eugene Hillsboro Portland	Creative Computers & Electronics University of Oregon Bookstore Quest Enterprises, Inc. Megatrhea
<b>PENNSYLVANIA</b> Butler Downington Exton Philadelphia	Software Corner Downington Computer Center Software City Some Hole In The Wall
<b>SOUTH CAROLINA</b> Charleston Heights Sumter Travelers Rest	Software Haus Micro-Computer Depot Concurrent Technologies Corp.
<b>TEXAS</b> Austin Bay City Houston San Antonio	First Byte Computer Co.
<b>UTAH</b> Provo	Electronics Insight Impulse Computers Computer King Wagner Bros. Computer Store
<b>VERMONT</b> Rutland	Lloyd's Business Machines
<b>VIRGINIA</b> Alexandria Falls Church Gloucester Point Norfolk Springfield Virginia Beach	Computer Marketing
<b>WASHINGTON</b> Bellevue Centralia College Place Federal Way Marysville Olympia Renton Seattle	Alonso Book & Periodicals Soft Cost Gloucester Electronics Micro-Enhancements Fairfax Computer Corp. Beach Business Machines
<b>WEST VIRGINIA</b> Charleston Dunbar Morgantown	Commercial Computer Systems Centralia Computer Center Discount Computer Supply Compu-Place Computer World Computer Center Puget Sound Electronics Bits & Chips R&K Enterprises Quality Software B & I Magazine & Books
<b>WISCONSIN</b> Janesville Stevens Point	Salmon's Diversified Office Services Wilsumco Computer Computer Closet
<b>WYOMING</b> Cheyenne	Emerald Computers Mom's Computers

<b>ARGENTINA:</b> Buenos Aires	ICP, S.A.	Richmond Penticton Port Cogutlam Prince George Surrey	Computer King Corporate Computers Compulit Computer King Computer King The Computer Dept. of London Drugs Odyssey Computer Services	Scarborough Toronto	Scitron Computer Junction CP&A
<b>AUSTRALIA:</b> <b>SYDNEY</b> Kingsford	Paris Radio Electronics	Victoria	Micro-Mentor, Inc.	Waterloo Windsor	Computer Junction Facts & Figures Computer Service
<b>VICTORIA</b> Melbourne	Computer Biz	<b>MANITOBA</b> Winnipeg	Atlantic News	<b>QUEBEC</b> Montreal	Lemon PC
<b>CANADA:</b> <b>ALBERTA</b> Calgary	Tesserac Computer Systems The Computer Shop	<b>NOVA SCOTIA</b> Halifax	Burlington Business Systems Neutron Computers, Inc.	<b>SASKATCHEWAN</b> Saskatoon	Memory Lane Computers
Edmonton	CompuSoft Computique Compu-ware Disk and Chip LEW Computers	<b>ONTARIO</b> Burlington Guelph Kitchener London	Home Computer Centre ABA Computer Center Town & Country Business Machines E.T. Wilson Office Equipment LTD.	<b>ENGLAND</b> East Sussex	Molimerx LTD
Grand Prairie	Ottawa	Ottawa	Computer Support	<b>PANAMA</b> Colon	Peikard, Inc.
<b>BRITISH COLUMBIA</b> Abbottsford	Clearbrook Computer Centre	Peterborough		<b>NEW ZEALAND</b> Palmerston North	Viscount Electronics LTD
				<b>VENEZUELA</b> Maracaibo	Byte Computer Center

## ADVERTISERS INDEX

We encourage you to patronize our advertisers — all of whom support the Sanyo line of personal computers. We will appreciate your mentioning **SOFT SECTOR** when you contact these firms.

A-OK Computers.....	31, 33	NRI Schools .....	17
Block Mkt.....	42	Owl-Services .....	38
Bluemaster.....	25	PT Software.....	52
Chaucer Software.....	26	Peripheral Products Distributing .....	14
Comtel .....	53	Prickly-Pear Software.....	18
Computer Associates, Inc. ....	39	Rocky Mountain Micro .....	52
Comp-U-Type.....	16	Scottsdale Systems, LTD. ....	58
Computer Grove .....	39	Shoreland .....	42
Computer Toolbox, Inc., The .....	3	Soft Sector Binder .....	27
EPIC Sales Inc. ....	7	Soft Sector On Disk .....	27
Intersecting Concepts .....	6	Software Answers .....	22
James River Group, Inc., The .....	BC	Software Toolworks .....	48
Lotech Software Designs.....	24	Tampa Bay Digital .....	53
MichTron .....	IFC, 5	True Data .....	47
Michigan Software Distributors .....	25	TypeRight .....	22
MicroComputer Tools Co. ....	23	VCR.....	IBC
MVP Software .....	58	Wagner Brothers .....	47

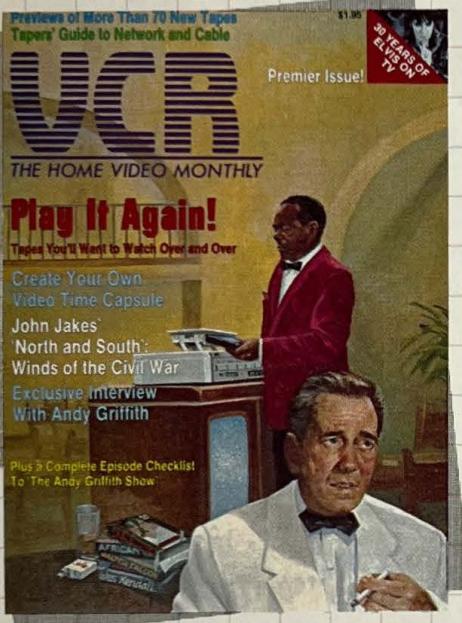


Call:  
**Jack Garland**  
Garland Associates, Inc.  
10 Industrial Park Road  
Hingham, MA 02043  
(617) 749-5852

Call:  
**Kim Vincent**  
Advertising Representative  
The Falsoft Building  
9509 US. Highway 42  
P.O. Box 385  
Prospect, KY 40059  
(502) 228-4492

Call:  
**Cindy Shackleford**  
Director, West Coast Office  
**Shirley Duranseau**  
Advertising Representative  
12110 Meridian South—Suite 5  
P.O. Box 73-578  
Puyallup, WA 98373-0578  
(206) 848-7766

**The publishers of Soft Sector  
are taking an interest  
in a different type of programming**



**Yes, I'm ready for some real entertainment! Send the next 12 issues of VCR to my door.**

**Subscribe now for only \$15 and save 36% off the regular newsstand price.**

Name \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ ZIP \_\_\_\_\_

My check in the amount of \_\_\_\_\_ is enclosed. (In order to hold down costs, we do not bill.)

Charge to:  VISA  MasterCard  American Express

Account Number \_\_\_\_\_ Exp. Date \_\_\_\_\_

Signature \_\_\_\_\_

\*Subscriptions to VCR are \$15 a year in the United States. Canadian rate is U.S. \$22. Air mail rate elsewhere is U.S. \$60. All subscriptions begin with the current issue. Please allow 5 to 6 weeks for first copy. Kentucky residents add 5% sales tax. U.S. currency only, please. In order to hold down non-editorial costs, we do not bill.

**Mail to: VCR, The Falsoft Building, P.O. Box 385, Prospect, KY 40059**

**T**hat's right. We've decided that programs like Sketch-It and Sanyopoly aren't the only great ones around. There are also Silver Streak and Star Trek and Some Like It Hot — software of a different sort.

That's why we're introducing **VCR**, **The Home Video Monthly**, the magazine for the new generation of home viewer.

Home video has evolved beyond the "hacker" era, when you needed a degree in electronics just for a little entertainment. Most people don't care about signal-to-noise ratio and wow-and-flutter specs. They simply want to know how best to use and enjoy the equipment they have.

And that's what **VCR** will offer — how to get the very best in home entertainment from your equipment.

Each month, **VCR** will bring you previews and ratings of every new offering on tape and disc: music videos, children's shows, how-to guides, and movies, movies, movies.

We'll tell you which shows the critics themselves will be taping on network and cable, and we'll pass along tips from the experts on how to get the best possible reproductions. You can also turn to us for the answers to your questions, ranging from the trivial to the technical.

Even more, each month we will feature exclusive interviews with the stars and the star-makers, along with articles designed to help you relive some of your fondest video "memories."

Yes, programming is more than spreadsheets and databases. And we know you'll want to be a charter subscriber to the guide to the very best in entertainment software.

**VCR, The Home Video Monthly**, made its debut in January 1986.

# ACCOUNTING FOR MICROS



**ACCOUNTING FOR MICROS** is a set of integrated accounting programs which meet professional standards. They're fast and easy to use, with complete instructions. Our manual (shown above) also includes helpful information on bookkeeping and computers.

#### **GENERAL LEDGER ..... \$125**

Allows up to 1,000 accounts & 1,000 transactions/month. Retains mo/end balances for Last year, This Year and Forecast. Includes Cash Disbursements, Cash Receipts and General Journals. Reports include Balance Sheet, Income Statement, Annual Summaries and Journal Reports.

#### **ACCOUNTS RECEIVABLE ..... \$125**

Allows up to 2,500 customers and 1,000 invoices per month. Invoicing can access Inventory Module. Keeps customer names and addresses. Invoice prints on plain paper or any pre-printed form. Statements can be printed at any time.

#### **INVENTORY ..... \$125**

Allows up to 4,000 parts. Keeps 3 month history of unit sales as well as year to date. With AR, can be used as point of sale system (prints invoices, handles cash). Reports include Inventory Value and Stock Report, Internal and Customer Price List.

#### **ACCOUNTS PAYABLE ..... \$125**

Allows up to 500 vendors and 600 invoices/mo. Records invoices and handwritten checks. Prints computer checks on any pre-printed form. Keeps vendor names and addresses.

#### **PAYROLL ..... \$125**

Will handle up to 100 employees with eight deductions per employee. Deductions may be determined as fixed dollar amounts or percentages, or referred to a table for automatic look-up. Tax tables are easily entered, or purchased separately. Prints checks and W2's.

#### **SET OF FIVE ..... \$465**

#### **SET OF FOUR ..... \$395**

#### **SET OF THREE ..... \$325**

#### **RUN ON MOST CPM AND MSDOS**

Apple CPM	IBM PC,XT,PC jr,AT	Sanyo (all)
Columbia	Kaypro (all)	Tandy (all)
Compaq	Morrow (all)	TeleVideo
Corona	Osborne (all)	Zenith 100 & 150
Eagle (all)	Panasonic	8" CPM
Epson QX-10	Radio Shack CPM	Other compatibles

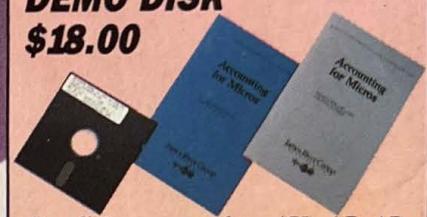
**\$395** Set of Four

**\$325** Set of Three

**\$465** Set of Five

#### **DEMO DISK**

**\$18.00**



Try all 5 programs above (GL, AR, AP, IN, PR). Order our DEMO DISK for \$18.00 (includes shipping). Condensed versions of the programs give you the "feel" of data entry and access. Includes sample reports and instructions. Specify machine.

#### **TMAN ..... \$125**

The "Catch-All" program. Files any type of information for quick access. Name or subject oriented with 15 lines of notes per name. Use TMAN as a mailing list, filing system, notebook, etc. Can be used alone or with data from our other programs.

Try **TMAN DEMO ..... \$16**

**HOW TO ORDER:** Please specify machine and disk format. You can pay by check, by VISA or MasterCard (we need your expiration date and card number), or by UPS COD (add \$2.50 COD charge). Our price includes shipping. Minnesota residents, add 6% sales tax). We ship most orders the same day.

or **ORDER BY PHONE: 612-339-2521**

**James River Group**  
INCORPORATED



(612)339-2521

125 North First Street  
Minneapolis, MN 55401